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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten. Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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**Every practicing physician should have a copy of the United States Pharmacopeia, 8th Decennial Revision.**

EDITORIAL NOTES.

The following words are not intended as a criticism of a particular medical journal, but rather as a direct object lesson of **THEORY AND PRACTICE.** the general inconsistency of even those medical publications which are the property of medical men. The *St. Paul Medical Journal* is "Edited and published by the Ramsy County Medical Society." At page 694 of its issue for September will be found a "Notice to advertisers. Only ethical advertisements received." At page 695 is a very good editorial on the subject of "Proprietary remedies and prescription writing," in which the lack of training in *materia medica* and prescription writing in our medical schools is deplored, and is evidently considered, and justly, as one cause of the increasing use of nostrums with fanciful names, by physicians. Now consider the students "who cannot write prescriptions at all," to use the words of the editorial in question, and who settle in St. Paul, join the Ramsy County Medical Society, receive the *St. Paul Medical Journal* and read this or some similar and equally excellent editorial. On one page is the statement, "only ethical advertisements received"; on the other is an editorial which speaks for the best in medical ethics, highly commends the Council on Pharmacy and Chemistry of the A. M. A., and stamps the high character of the editorial control of the journal in question. Considering these facts, suppose the aforesaid students look

through the advertising pages of this journal in order to learn which "proprietaries" are ethical. They will find commended to their attention and recommended by the statement on page 694 that only ethical advertisements are received, *Gray's tonic; antiphlogistine; transodine; "the family laxative, fig syrup"; Kutnow's powder; peptomangan; passiflora; phenol-sodique; bovinine; sal hepatica*; and, last delicious morsel, *uriseptin*. To the best of our knowledge there is not one of these things that conforms to the rules of the Council on Pharmacy and Chemistry.

During the present month of October, Dr. J. N. McCormack, of Bowling Green, Kentucky, is to visit California and address the **McCORMACK ON ORGANIZATION.** physicians of our state on the subject of organization and what it means to the community and to the physician. During the latter part of September and the early weeks of October he will devote his energies to organization work in Washington and Oregon, reaching Sacramento, where the first meeting is to be held, on the 16th. On the 17th a meeting will be held in San Francisco and on the 18th he will talk to the physicians of Oakland and the Councilor District of which it is the center. Meetings will also be held at San Jose, Monterey, San Luis Obispo, Los Angeles, Pasadena and San Diego. No man ever spoke more entirely from the heart on any subject whatever than does Dr. McCormack when he talks on the subject of the welfare of the medical profession, its relations to the citizens in its charge, and the great value to physician and layman resulting from harmony and active organization in the medical profession. Physicians who are squabbling amongst themselves and airing their personal fights for the benefit of the community are far from being a credit to the profession to which they belong. Nor can a community harboring such doctors be at all well served, medically, or have much respect for the profession to which these fighting representatives belong. Fortunately for us, there are very few such communities in our state, and as the months go by the harmony in the ranks of our profession becomes more and more marked. We have taken the first step—we have a fairly good organization throughout the state. Now it remains for us to take the next step—to perfect that organization and to make it more and more useful, not alone to the profession itself, but to the laymen whom we serve. It is largely to help us take this step that Dr. McCormack is coming to visit us. Every physician, and especially every member of every component society, should make it his particular business to attend one or more of the meetings which Dr. McCormack will address, even if at some personal inconvenience. There is no man living in this country who so fully understands what our profession may do, if it will, or how it may better itself and the public generally, than does Dr. McCormack. Under no circumstances fail to hear him and do

everything you can to bring to these meetings physicians who are not now members of our organization.

We all know that the American Medical Association is a body truly representative of the very best in the medical profession DIRECTLY of the United States and that its INSULTING efforts are and have been directed toward improving and helping American physicians. A recent undertaking of the Association was the organization of a Council on Pharmacy and Chemistry with the object of protecting the physician and the patient from some of the all too many frauds foisted upon us by lying and utterly unscrupulous "manufacturers." The committee on chemistry of this council recently reported on certain so-called remedies and this report we had the pleasure of reprinting in the July JOURNAL at page 223. Among other things, "phenalgine," which the "manufacturers" claim to be a definite chemical substance, was shown by analysis to be merely a mixture of acetanilid, sodium bicarbonate and ammonium carbonate. The five gentlemen whose signatures are attached to this report are all of them chemists of national, if not indeed of international, reputation, and one of them is the chemist in charge of the Bureau of Chemistry of the Department of Agriculture of the United States, Dr. H. W. Wiley. The Association is possessed of sufficient of this world's goods to satisfy a judgment and we would expect, if any concern had been injured by the Association's Council, to see such "manufacturer" promptly file a damage suit. But a damage suit brings to light facts—and this is sometimes dangerous—so the "manufacturers" of "phenalgine," this acetanilid mixture, have not brought a suit. They have bought two pages of the *Medical Record*, a journal which has, heretofore, been supposed to be published in the interests of the medical profession, and in these two pages they print what is nothing more nor less than a direct and unqualified insult to every reputable physician and especially to every member of the American Medical Association. It is almost inconceivable that the *Medical Record* could or would permit itself to allow such a gross insult as it issued to the world in its number of September 2d. Are reputable medical men going to permit this sort of thing? Are they going to continue to support a journal which permits "manufacturers" of this class to use its pages for the perpetration of insults directed at the medical profession and its representative body, the A. M. A.? Are we so grovelingly tolerant that we will continue to contribute our good money—in the shape of subscriptions—to the support of a publisher that will permit his advertisers to so outrageously insult us? Think this over carefully and then, if you are a subscriber to the *Medical Record*, consider whether you desire to aid that journal in allowing advertisers to insult you, by continuing your subscription.

The *New Orleans Medical and Surgical Journal* for September presents some very interesting figures on the relative number of

**NEW ORLEANS DEATH RATE.** cases and deaths from yellow fever during the present and previous epidemics. From these it appears quite clear that the present epidemic is somewhat under control and the prospect of bettering the season's record before the advent of cold weather appears to be good. The same journal regularly publishes a mortuary report for the city of New Orleans, and that for the current month contains matter of interest. The whole country has been profoundly roused by the yellow fever epidemic and hundreds of thousands of dollars have been spent in quarantine and preventive measures. The mortuary report for July shows that 42 whites had died during the month from the prevailing epidemic; but it also shows that 84 persons died from tuberculosis, 53 from diarrhea, dysentery and enteritis, and 46 from heart disease, during the same period. In other words, tuberculosis, claiming more than twice as many victims during the month of July as did yellow fever, excites no comment. Of course this was only the very beginning of the epidemic, and the month of August will show a very much larger number of deaths from yellow fever, yet the figures in the table are striking. Doubtless one would be quite safe in assuming that a much larger number of persons have died, in the city of New Orleans, during the past 50 years, from tuberculosis than from this terrifying epidemic. Tuberculosis is always with us and its fatal results are achieved insidiously; yellow fever is only an occasional visitor and brings death suddenly and, to a degree, mysteriously. Does it not seem time for each commonwealth to wake up and do a little more fighting against tuberculosis?

It is difficult to conceive of a more inconvenient modern "convenience" than the telephone, as the service is at present administered in San Francisco and some other parts of the state. The old and monopolistic company seems to have engaged the services of some mentally astigmatic genius for the purpose of devising means and methods for the aggravation of the telephone subscriber; and of all men, probably the physician suffers most from this cause. Oftentimes not only his own practice and his own business interests suffer, but his patients are put to much annoyance and not a little danger by the carelessness of the telephone operators. Nearly every man who comes to the office of the Society "kicks" about the telephone service. It does not do any particular good to "kick" to the secretary, for he has the same cross to bear. But why not try a sort of joint and combined "kick?" Agree upon a time and then all file complaints with the company; perhaps that would do some good. What do you think of the idea?

**WHAT'S IN A NAME?** Last month the JOURNAL referred to the pamphlet issued by the Marine Hospital Service on the subject of the new Pharmacopeia. We wish again to refer to the same document, and call attention to another group of remedies

about which there seems to be a considerable amount of confusion in the physician's mind. At page 40 of this official document we find "Hexamethylenamina," the new Pharmacopeial name for hexamethylene-tetramine, and we read that it is "also known as *aminoform*, *ammonio-formaldehyde*, *cystamine*, *cystogen*, *formin*, *uritone* and *urotropin*"; at least two more may be added—*hexa-cystine* and *formamine*. In other words, we are informed by this official document, that all of these fancifully named remedies are one and the same chemical—hexamethylene-tetramine—and that whether you write for *urotropin*, *formin*, *cystogen* or any other of these names is immaterial; your patient will take the chemical, hexamethylene-tetramine. A serious objection has been urged to the new Pharmacopeial name given to this chemical; it is too long to be remembered, and cannot well be abbreviated without danger of confusion. The objections are reasonably good, but they do not apply to a simple abbreviation of the chemical name—*hexam.-tet.* The chemical name so abbreviated is easy to remember, is definitely descriptive, is not at all liable to be confused with any other abbreviation, and should be generally used. Just so long as physicians will continue to prescribe this chemical under its various fanciful names, just so long will they continue to indicate their own ignorance of their *materia medica* and their superlative faith in the prejudiced statements of the various detail men. And moreover, just so long will they continue to make the pharmacist pay a high price for medical ignorance, for they will continue to compel him to carry in stock a number of trade-brands of the same identical chemical. Is that right? It has been urged that the trade name given to a remedy of this sort by the manufacturer first introducing it should be used exclusively, so that he might get the benefit of his outlay in time and money in perfecting the discovery. There is certainly some justice in this claim, and it could be conceded were it not for the practices of manufacturers themselves. One of them will discover and introduce a chemical of this sort, and it will soon be found to have certain valuable medicinal properties. Immediately a number of other manufacturers will make the same thing, and market it each under a different and also fanciful name, and each claim that his preparation has distinct and unique qualities not possessed by any other substance under heaven. If they were content to market their products under definite and recognized names—either chemical or arbitrary names—and to depend for sales upon the quality of the goods, reputation of the manufacturer, price of the product, etc., all would be well. But this they do not, and consequently there seems to be no honorable course open to the conscientious physician

save to disregard them all and prescribe the remedy under its pharmacopeial or chemical name; in this particular instance *hexam.-tet.* would seem to be the easiest, and it certainly is as short and as easily remembered as any of the trade names under which the chemical is marketed. Why not follow the Pharmacopeia for a while and see how it works?

From present indications the 17th edition of the Official Register and Directory of Physicians

**OFFICIAL REGISTER.** will be distributed during this month of October. During the past year every effort has been made to correct the data contained in the book and to bring the addresses up to date, yet there are still a considerable number of names in the "address unknown" list. Once more we earnestly call upon each and every member of the Society to aid us in this work and to keep us posted as to the movements of physicians. If a doctor moves into your vicinity, let us know about it; it will take only a few seconds of your time, and it will make the Register just so much more useful and valuable. Please look through the "address unknown" list and advise us at once if you know the present correct address of any physicians in that list. Remember that this Register, like the JOURNAL, is your own property, and that as such you should take an interest in it and endeavor to aid us in making it accurate. Criticisms and suggestions are more than welcome—they are desired. The general scheme of last year has been followed in the present volume, and seems to satisfy all practical demands. If you do not receive your Register by the early part of November, let us know.

There is an exactness of diction and an accuracy in the observance of all superficial things

**A LAST WORD ON ACCURACY.** in life which to some people is all important. Thus we see our amiable friend Mr. Rockefeller observe with a marvelous degree of exactness all the outward and visible ordinances of the religion which he professes, while at the same time he is reported to regard it as a crime to himself if he allows the victim of a business deal to escape with a single dollar that might have been extracted. One may also read learned and scholarly editorials in some medical journals, defining exactly the meaning of a Greek root, or setting forth with commendable accuracy those things which fall within "commercialism" and those characteristics of pure "professionalism"—and in the same journal discover that "professionalism" has been seduced by "commercialism," and that its advertising pages help to promote the use of such things as chionia; ergoapiol; anti-kammia, etc. But this exact adherence to the letter and absolute disregard of the spirit of the law, does not appeal to us. Your JOURNAL, under the guidance of your Publication Committee, began an active war against certain well-defined abuses

which have crept into the medical profession, and so far as we are aware, the principle actuating us has been conscientiously lived up to. The verbiage of one or two of our criticisms has been questioned, and the cry of "inaccuracy" raised, much to the delight of some of the smaller journals, probably "published for profit and not for the profession." If there has been any error in the principle, we have thus far failed to have it called to our attention. Abusive adjectives are not arguments, and there is too much real work to do to pay any particular attention either to them or to thinly veiled insinuations of improper motives. Time will settle many questions, and we are quite willing to let the problem of motives await its solution in due course; some people are so constructed that they cannot believe the truth.

Elsewhere in this number of the JOURNAL will be found the address of Dr. Morrison, read before the meeting of the Railway Surgeons' Association.

**SOME GOOD SUGGESTIONS.** It is to be commended for its excellent suggestions, particularly in the matter of frequent examination of water supply and conservatism in emergency surgery. It is certainly cheaper and easier to head off an epidemic than to subsequently discover its cause and stamp it out. The railway surgeon must often face conditions that are very perplexing and that tax his judgment to the extreme, and in just these conditions will the suggestion of conservatism offered by Dr. Morrison be of very great value. Not infrequently more strength is required to leave an injury alone than to operate immediately; but the final result may not be so satisfactory, so far as the wage-earning individual is concerned.

The investigations now under way in New York are very decidedly illuminating the inside manipulations of the big insurance companies. It is particularly interesting to **KEEP AT IT.** note that no word of possible criticism attaches to the name of any medical director or employee. Indeed, quite the contrary, for it becomes more and more evident that these companies are well able to pay a decent fee for examinations, and this fact seems to be dawning upon the editorial intelligence of a number of medical journals about the country. It is a rank injustice that physicians should be paid less than \$5.00 for any examination, only that the few dollars thus saved may be added to the enormous sums of hoarded wealth which are kept on hand in New York for the purpose of manipulating Wall street and floating "undigested" securities. Keep pegging away at this question of cheap fees and eventually we shall see the time when the minimum fee will be \$5.00—as it should. Talk to your friends—against these cheap-fee companies; when possible, persuade them to take out their insurance in some one of the numerous good and sound companies that pay decent fees for careful

work. Let them know that a company paying for a cheap examination is going to get cheap, and to that extent unreliable, work, and that such work is a danger to the company, in the long run. If possible, refuse to make any examination for less than \$5.00, even if the agent does get mad and swear a little because he may have to pay the extra \$2.00 himself; it won't hurt him and the time required to make a thorough examination is worth \$5.00, or it is worth nothing. We can do a lot toward bringing about this reform if we will but keep at it; keep talking; keep refusing to make cheap examinations; keep explaining to prospective insurers what it means and how the big ones are gathering enormous cash reserves—partly at your expense. They can afford to pay \$80,000.00 salaries, but cannot afford to pay \$5.00 examinations.

The secretary desires to call the attention of members to the fact that the office of the Society,

**USE THE OFFICE.** in the Y. M. C. A. Building, San Francisco, could possibly be of service more often than it is, if they would but use it as a sort of "clearing house."

For instance, it very frequently happens that nurses desiring hospital appointments, or general work, apply to the secretary; we also have noted two or three stenographers who are perfectly competent to take medical dictation. Physicians desiring to go away for a time and who have no one at hand to take care of their work, could often be placed in communication with men who would be glad of the change and who would like the opportunity of thus substituting for the absentee. Furthermore, a number of the hospitals in San Francisco are now regularly notifying the office of the time of operations to be performed, and all visiting physicians are cordially welcome to attend such operations. A little coöperation, a little more effort to center these various lines of interest in the office of the Society, will very soon be found to largely effect the convenience of all.

Not a month and scarcely a week goes by that does not see some member of the Society come to

**LOCATIONS FOR SALE.** the office and ask about a suitable location, or inquire whether we know of any one who wants to buy a practice or secure a location. Very frequently we are asked about office rooms and just at the present time we have on file a memorandum relating to some offices in San Francisco that could be obtained by an oculist and aurist to very good advantage. We also know of several locations which are for sale. It is no trouble to attend to these things, though doubtless some members are restrained from applying to the office for information under the mistaken belief that it is a bother to the secretary. The office of the Society should be a sort of central exchange for just such things and the secretary trusts that the members will so regard it and will not hesitate to apply for information from time to time.

**"MURDERED BY ADVERTISEMENT."**

Patent-medicine horrors never reached a point of deeper degradation than in the yellow fever troubles of the south. Mr. Samuel H. Adams, whose series of articles will begin probably in five or six weeks, will hardly have anything more startling to narrate than the incredible performance of "Peruna" in alliance with the New Orleans *Times-Democrat*. This sheet has accomplished a feat of prostitution which, considering its pretense to respectability, probably sets the record. While the south is struggling to check a peril of the direst magnitude, this newspaper publishes an interview with "Dr. Hartman," with the familiar allegation that he "said in part," and all other devices to make it look like an important piece of news. Its headlines are: "How to Avoid Yellow Peril. An Interview With Dr. Hartman Concerning the Yellow Plague." To the reader this is the genuine opinion of a physician. He cannot know that Dr. Hartman is the head of the Peruna Company, and that the *Times-Democrat*, in whom the reader presumably has some trust, is selling itself and the safety of its constituents for a bag of gold. "A summary of this interview," the *Times-Democrat* informs us, "is being spread broadcast over the United States for the benefit of yellow fever sufferers." The gist of it is that, while screens and other precautions are advisable, Peruna should be taken at once and continued during the whole course of the epidemic. "I feel sure," the doctor went on to say (!), "that any person following this advice is in no danger of taking yellow fever." For anybody who believes we have taken too seriously the patent-medicine evil and newspaper complicity therein, this unspeakable outrage should be a lesson. Is there anything to which men cannot be led by money? To own a newspaper and hire it out to perilous fraud in an emergency like the yellow fever danger almost surpasses one's belief in human greed. No more disheartening proof of the need of the crusade which we have begun could possibly have been offered.—*Collier's*.

[*Collier's*, in the editorial here reprinted, uses the term "patent medicine" in the sense in which the public generally uses it. We beg to call attention, once more, to the fact that these preparations of the "Peruna" class are *not patented medicines*; they are simply nostrums advertised directly to the public. In this connection it is interesting to note that, according to some pharmacists in San Francisco, the sale of these so-called "patents"—really nostrums—has fallen off fully 50% in the last year or so. That is certainly encouraging.—ED.]

*Collier's* has very justly and moderately scored the newspapers for this sort of murderous "write-up," and a number of medical journals have expressed their pleasure and their gratitude for the outspoken attack by *Collier's Weekly*. The same sort of thing is going on right along in many so-called medical journals, principally of the smaller class, and we sit supinely and utter never a word. Is there any material difference, so far as rankness is concerned, between the write-up of "Peruna" referred to by *Collier's* and the following write-up of "Tongaline" which appeared in the August issue of the *Mobile Medical and Surgical Journal*? If there is any such difference we should be delighted to have the *Mobile Medical and Surgical Journal* point it out to us:

"Stegomyia fasciata has produced an epidemic of yellow fever in certain sections of Louisiana and adjoining states.

"Stegomyia punctata has inoculated thousands with virulent malarial germs throughout the balance of the Mississippi Valley.

"Tongaline Mellier, in one of its forms as indicated, antagonizes and destroys the effects of these parasites on account of its extraordinary eliminative action on the liver, the bowels, the kidneys and the pores, whereby the poison is promptly and thoroughly expelled."

**Do you believe it?**

**NEXT!**

In the August issue of the JOURNAL, referring to the action of the House of Delegates at the Portland meeting, the following statement was published: "The first gun was fired on the afternoon session of Monday, when the Missouri delegation presented resolutions from their State Association calling for betterment in the *Journal's* advertising pages." Criticising this statement, the *St. Louis Medical Review* says:

In an editorial on the nostrum question, it states that the Missouri delegation presented resolutions at the Portland meeting "calling for betterment in the *Journal's* advertising pages"; meaning thereby the *Journal of the American Medical Association*. Now these resolutions were framed at the annual meeting of the Missouri State Medical Association at Excelsior Springs by a specially appointed committee, consisting of the state delegates, Drs. Jabez N. Jackson, H. R. Keiffer and W. B. Dorsett. They were presented at Portland by Dr. Dorsett, on behalf of the committee, and the terms used consisted of a recommendation that the advertising of nostrums in the reading columns of medical journals [plural] should be deprecated and discredited. It appears, therefore, that the resolutions tendered by the Missouri committee have been so garbled by the CALIFORNIA STATE JOURNAL OF MEDICINE as to make them appear to support the animus constantly displayed by that organ against the editor of the *Journal of the American Medical Association*. This, again, is not only inaccurate, it is dishonest; and it is keenly and justly represented by those whose actions are thus misrepresented and their convictions outraged.

The resolutions introduced by Dr. Dorsett, delegate from Missouri, are to be found at page 262 of the *Journal A. M. A.* for July 22d, and read as follows:

Whereas, The majority of so-called proprietary remedies are secret nostrums whose formulae are unknown to the medical profession; and

Whereas, The use of such remedies stifles investigation of rational therapeutics and lowers the standard of our practice to mere empiricism; and

Whereas, The medical journals, the creatures of our profession, are filled with advertisements of these nostrums enlisting the attention of the unwary practitioner and resulting in enriching the manufacturer and defrauding the unsuspecting patient; therefore be it

Resolved, That it is the sense of this body that the use of these remedies by the members of the American Medical Association is reprehensible, and that these advertisements should not appear in reputable medical journals.

There are the resolutions exactly as published in the official minutes of the A. M. A.; please read them carefully, and they will disclose several interesting things.

First. Can anyone who is conversant with the advertising pages of the *Journal A. M. A.* for the past twenty years or less conscientiously deny that these resolutions called for betterment in its advertising pages?

Second. Can the gentlemen who are reported by the *St. Louis Medical Review* to have drawn up these resolutions deny that they had the *Journal A. M. A.* in mind as one of the journals needing reform?

Third. Can anyone find in these resolutions, as officially published by the Association, "a recommendation that the advertising of nostrums in the reading columns of medical journals should be deprecated and discredited"? If not, the phrase as given by the *St. Louis Medical Review* is unquestionably a substitution.

Fourth. Does it appear to any person of ordinary intelligence that the resolutions have been so garbled by us as to appear to support an attack upon the *Editor of the Journal A. M. A.*?

Fifth. The statement that this JOURNAL has "constantly displayed an animus against the editor of the *Journal A. M. A.*" is false. This JOURNAL has from the commencement of its criticisms of the *Journal A. M. A.* placed the responsibility where it belongs—with the Trustees; never but once has the editor of that journal been referred to in the pages of our JOURNAL, and on that occasion the statement was specifically made that he was not responsible.

One last word. We have not space in our JOURNAL to waste upon this sort of comment, and consequently there will be no further controversy with the highly imaginative *St. Louis Medical Review*. Your JOURNAL is getting, and is bound to get lots of this sort of criticism; indeed, a number of so-called medical jour-

\*Italics ours.

nals have so far forgotten that universally recognized journalistic courtesy which refrains from personalities as to mention and attack the editor of your JOURNAL by name. But that is all right; he can stand it; but please remember, when you see or hear these things, the real reason for this abuse. It is a purely commercial one. For instance, take the very issue of the *St. Louis Medical Review* in question. It carries 13½ pages of advertising, of which probably 12 pages are paid for in cash. If the rules of the Council on Pharmacy and Chemistry were applied to this advertising, at least 4 pages of it would have to go out. There is your explanation. These journals live on the nostrum advertising which they print, and they do not at all like to have this fact pointed out. Hence they abuse your JOURNAL, for the reason that it is so persistently agitating the nostrum evil and what it really means.

#### "Patent" and Secret Proprietary Medicines.

Some weeks ago we published a letter from Mr. Bok of the *Ladies' Home Journal* in which he appealed to physicians for aid in the fight against patent medicines. Since then some correspondence has passed between Mr. Bok and the editor of *The Journal* (A. M. A.). The last letter received was accompanied with a number of advertisements clipped from medical journals—and we regret to say some were from *The Journal of the American Medical Association*, one of which is still there, and probably will be till the contract expires—with a query, "What is the difference between these and 'patent medicines'?" No reply has been sent, as we were not able to answer. If any of our readers can tell the difference between most of the secret proprietary medicines that are advertised to physicians in medical journals and "patent medicines" that are advertised to the public in newspapers, we hope they will inform us so that we can reply to the editor of the *Ladies' Home Journal*.—*Journal A. M. A.*, September 9, 1905.

[The STATE JOURNAL wishes to congratulate the *Journal A. M. A.* on this frank expression regarding certain undesirable advertisements which appear in its pages; this attitude disarms criticism. It is only to be regretted that such a statement as this was not made a year ago, in which case we would have been spared the necessity of making unpleasantly critical remarks. We are particularly glad to note the public announcement that the objectionable advertisements will be dropped from the *Journal's* pages as the contracts expire, and we may look forward to the *Journal* in 1906 and thereafter taking that position in medical journalism which the Association has taken among American medical men—in the front rank of those who are earnestly striving for the right by example as well as by word.—ED.]

#### Inefficient Refracting.

There are probably not a half dozen hospitals or ophthalmic clinics in the world outfitted with a trial-frame or set of test lenses that would enable even an expert refractionist to diagnose ametropia with the perfect accuracy which is necessary to cure morbid ocular reflexes. But those set to do refraction work in the public clinics are not expert. They are the students and learners. Hence nine-tenths of the glasses prescribed in these institutions are not correct. Ophthalmic surgery and inflammatory diseases are all that interest, and these would be largely preventable by the refraction that is neglected and misdone.

Even in the institutions for the blind, it has been found that some of the inmates are not blind, and that their remnants of vision may be so vastly improved as to make these dependents self-supporting.—Gould, in *Journal A. M. A.*

#### San Rafael Cottage Hospital.

Under this name, Drs. Howett, Jones and Wickman, of San Rafael, have incorporated and established a hospital.

#### PRESIDENT'S ADDRESS AT THE THIRD ANNUAL MEETING OF THE PACIFIC ASSOCIATION OF RAILWAY SURGEONS.

By N. H. MORRISON, M. D., Los Angeles.

FIND some difficulty in expressing to you the pleasure which I feel in presiding at the deliberations of the association at this time, its third session. While we are still a very young association, we have accomplished much in the brief period of our existence—so much, indeed, that we may look backward with pride and into the future with great confidence. The benefit which follows the gathering together of men whose activities are directed along the same general line is now well recognized, and I believe has been strongly characteristic amongst ourselves. The exchange of ideas during the general discussion of any topic which interests us all, the appreciation of the different view-points of other men, the knowledge of how others solve problems that confront every one of us, are features of our meetings that make for the betterment of all. An equally important result—the rubbing together of the various units which make up collectively the surgical system of the railway service—is not as a rule sufficiently appreciated. It is well for men who work together, or along the same lines, to know each other personally; to take a personal interest in each other's work; to become directly acquainted and to meet together from time to time. The surgeon has his own way of doing work, which is a part and parcel of himself. He prefers to hew his timber with his own broad axe, and he does better work when using his own instruments. The things he likes best he does with more zeal and pride than the things which he dislikes, and consequently he is apt to slight that which is disagreeable for him to do.

There are two or three important points to which I desire to call your attention. One is "Drinking Water." All water at division points, where men are working, should be carefully examined by a bacteriologist, and if found impregnated with germs should be sterilized before using for drinking purposes. This can be done at small expense by having the steam from the stationary engines condensed. We all know how easily water becomes infected with typhoid germs, and before we are aware of the fact an epidemic of typhoid fever breaks out, and we then have an abundance of trouble on our hands, which could easily have been avoided if the water had been examined at sufficiently frequent intervals so that we would know that the men were drinking pure water.

Frequent inspections should be made by the surgeons to see that the sanitary conditions are perfect at all points on the line where there are men working. Toilets and cesspools should be examined to see that the drainage is what it should be. It is more desirable to prevent disease among the men than it is to treat them after they become ill, and much less expensive to the associations, to say nothing of lessened danger to the individuals themselves.

The relation between the railroad surgeon and employee should be of the most confidential and agreeable nature. When a surgeon is summoned to attend an employee he should ascertain first whether it is a medical or surgical case. If surgical, he should go prepared to cleanse and dress the wound in the most careful manner, in order to prevent any infection. Should it be found necessary to scrub the parts with a brush, the lacerated or cut wounds should be filled with antiseptic gauze while the brushing process is going on, so as to carry no germs from the surface of the skin into the wound, which is often done if this precaution is not taken. After the wound has been cleansed and dressed, the patient, if the injury is serious, should be sent to the hospital, with a note to the surgeon in charge explaining what has been done. If the surgeon is called to a medical case he should

respond as quickly as possible, using as much care and gentleness in his examination and treatment as if it were a private case paying a good fee. Should the surgeon not show proper attention to a railroad man, he feels it much more keenly than if he were a private patient. We should always remember that "what is worth doing at all is worth doing well."

The relation of the surgeon to the railroad company is sometimes misunderstood. Surgeons are liable to error, as they may feel that they cannot serve well both the patient and the railroad company. In a case of accident the surgeon should always make a very careful examination, to determine if possible the precise nature of the injury. After the examination has been concluded the surgeon should render an honest and conscientious report. The patient should not expect the surgeon to do dishonest work for him, which he himself would not do. There is no easier way for a patient to lose confidence in the surgeon than for him to show a disposition to be unfair. A patient places his life in the surgeon's hands, and he must deal justly with him. On the other hand, the railroad company does not expect a report biased in their favor. What they want is to know the full extent of the injury and the probable time of recovery. A settlement with the injured party is based on the surgeon's opinion, and if the opinion is given honestly he has done all that can be expected of him.

The railway surgeon more than anyone else should be a thoughtfully conservative man. He should judge clearly and weigh carefully the ultimate probabilities. Again and again is he confronted with conditions which call for the exercise of the coolest judgment and the most careful consideration of the final consequences of what he must do at once. On him will often fall the responsibility which subsequently may mean much to the company in whose service he is enlisted; much of credit or much of blame. True, there is very often but little time in which to consider and weigh the pros and cons, and it is for that reason that I wish to impress upon you the importance of reasoning conservatism. One may always take away a little more, but one cannot replace what has been removed. Immediate amputation may seem to be imperatively demanded; yet if we temporize and watch the patient carefully, we may find that this more conservative treatment will result in the saving of a good and fairly useful limb. My rule is to cleanse the wound as well as possible, and control the hemorrhage; the slight oozing, as a rule, will stop on packing the wound gently with antiseptic gauze, slight pressure being made—not too great to interfere with the circulation. After this is done I cover the limb for some distance above the injury with antiseptic gauze (I prefer bi-chloride, slightly moistened), then apply a roll of cotton over the gauze and cover the whole limb with a large piece of oil silk. This can be held firmly in position by the roller bandage or with adhesive strips, as the surgeon may elect. By this method the normal temperature of the lower portion of the extremity is maintained by the natural heat from the upper part. I let this dressing remain on the limb for at least 12 hours, then remove it and examine the limb. If there is a sufficient number of blood vessels remaining, collateral circulation will indicate to the surgeon whether nature is capable of repairing the injured parts. The time for shock is now probably past, and we are able to determine whether amputation should take place or an attempt should be made to save the limb. We should always keep in view the fact that a workingman's limbs are his stock in trade, and if we take them away from him we deprive him of his capital. The limb may not be quite as serviceable as originally, but the laborer will manage in some way to make a living, while if his limb has been removed he feels that he is a pauper and of but little use to himself or anyone else. In a great majority of such cases men become beggars and loafers, and make no effort to earn their own living. Let us act on the side of humanity, and be guided by conservatism in all cases of injury.

## EARLY OPERATION OF GALL-STONE DISEASE.\*

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THE surgical treatment of gall-stone disease is a subject so extensive and one whose literature is so vast that it is a sheer impossibility to make an adequate presentation of it in a single paper. It seemed best, then, to select for this occasion a single phase of the subject and I have accordingly chosen as most appropriate for discussion before a society composed of both physicians and surgeons, a subject which presents common ground on which all the members may meet; viz., "The Value of Early Operation in Gall-stone Disease." Matters of the more intimate indications, in particular pathological conditions and the indications for particular operative procedures, are more appropriate for detailed discussion before societies of surgeons, but since physicians come into contact with cases of gall-stone disease before the surgical specialists see them, a free discussion of this common ground may be well timed; not that I can say much that is new to this audience, or that has not been said before, but I would say that as a conclusion drawn largely from my own operative cases, limited though they be, it is evident to me that there is need for wider conviction as to the advantages of early operation in gall-stone disease.

While the etiology of gall-stones is being rapidly worked out by the experimental pathologist, the symptomatology and the diagnosis by physician and surgeon together, the chief advances in the treatment have been by the practical work of the abdominal surgeon. A few great names stand out pre-eminent in gall-stone surgery, and it is a matter of considerable national pride that many of them are Americans. I would mention Courvoisier, Langenbuch, Robson, Kocher, Kehr, Richardson, Fenger, Halsted, Murphy, Davis and Mayo brothers.

The most hurried glance through the history of gall-stone surgery will show a decided tendency on the part of operators to choose their procedure and the time of operation more and more in view of the late and more serious complications and sequelae of gall-stone disease. In this field, perhaps more than any other, simplification of procedure means anticipation and attack before the more serious complications have arisen; it means seizure of the time for removal of the gall-stones, which are in reality foreign bodies, while the conditions surrounding them are still simple. Richardson has called attention to the analogous conditions presented by gall-stone disease and appendicitis and to how early operation in each case will prevent the more dangerous later conditions. Ochsner has emphasized the fact that a large percentage of cases of gastric troubles have their origin in the irritation produced by gall-stones which may manifest themselves in no other way, and argued for the early removal of such gall-stones.

While the mere presence of gall-stones in the gall-bladder does not constitute gall-stone disease, and may be looked upon as the result of an infectious inflammation, rather than the primal cause, still the history of great numbers of cases shows the vastly greater frequency of attacks of cholecystitis and cholangitis in the presence of gall-stones than in their absence. Therefore gall-stone disease may be looked upon as a group of essentially surgical affections based upon the mechanical conditions produced by the presence of gall-stones. Such a mechanical cause can be removed, so far as we now know, only by mechanical means. Internal medication has meaning in prophylaxis because much can be done by rational treatment and proper living to maintain a high standard of general health and thereby diminish the probability of the formation of gall-stones; but after gall-stones have once formed, about all that can be accomplished by medical means is the greater or less relief afforded as to certain symptoms by lessening in-

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testinal irritation. But this relief is seldom, if ever, cure.

The passage of a biliary calculus into the intestine with the enormous relief from the symptoms caused by the calculus in its descent, is often heralded as a cure; but the history of such cases shows too often that there are other calculi left behind which later cause more trouble than that which passed. It is the rarest thing for gall-stones to be formed singly. While single large stones are often enough encountered, they generally show evidences of having had companions; furthermore, the accepted theory of the formation of biliary calculi almost precludes the possibility of the formation of single calculi, whether they be formed about colonies of attenuated bacteria as nuclei or bits of debris cast off from the mucous membranes, both being the result of infection of the gall-bladder and therefore multiple. The passage of one calculus is no guarantee that all that are present will pass, even if they be all of one size, as they often are, having been formed as a result of the same infection. But every pathologist and every surgeon knows from experience that in a great proportion of cases there are two or more "crops" of gall-stones, so to speak—a series of small ones co-existing with one or more series of larger ones—and the passage of a small gall-stone is still less a guarantee that the larger ones will pass. Moreover, small gall-stones produce as serious pathological conditions as larger ones and even the very passage of small gall-stones is not at all an innocent matter, it is, for example, the commonest cause of acute and chronic pancreatitis. (Opie.)

Again, it would seem that undue weight is given the idea that the vast majority of people harboring gall-stones in their gall-bladders have no trouble attributed to them. Kehr speaks of only 5% having definite painful attacks. Robson, however, calls attention to a large class of cases in which "chronic invalidism" is due to quiescent gall-stones, and doubtless lesser degrees of invalidism are more common, still. It would seem that in cases with quiescent gall-stones there often are symptoms indicating the condition if only the physician has the diagnostic acumen and the industry to find them. Perhaps more often the symptoms are recognized but are attributed to some other cause. Such figures as those of Riedel, in which he estimates that there are 2,000,000 people in Germany with gall-stones, are gathered from post-mortem statistics and do not apply very definitely in the matter of symptomatology, i. e., we cannot say that the 95% have had no trouble caused by them. I have no doubt that if we as medical men were more on the lookout for gall-stones as the cause of obscure digestive disturbances we should find them far oftener than we had suspected, and that thus finding them we would be enabled by a simple and comparatively safe operation to permanently relieve the patient.

I have mentioned prophylactic medication; there is such a thing as prophylactic operation in gall-stone disease, and by that I mean operation at a time before serious pathological conditions have arisen. I think that the surgical world is pretty well agreed, in practice, as to the advisability of removing gall-stones when found in the course of operations on other parts of the abdomen, whether there have been symptoms attributed to them or not. I would go a step further and advise that whenever gall-stones are found, whether suspected or not, as for example, by the X-ray, the case should be seriously studied with reference to the symptomatology and to the removal of the gall-stones, and just as the surgeon who opens the abdomen for any cause examines the appendix as a routine procedure and removes it (having proper authority to do so) whenever it presents anything pathological, or contains a concretion or mass of fecal matter, or lies in dangerous proximity to any diseased organ, so also should he examine the gall-bladder for the presence of gall-stones as a routine procedure, and finding them should remove them by

cholecystostomy, provided, of course, that there be no indication to the contrary.

The mortality in the removal of gall-stones by cholecystostomy in uncomplicated cases is extremely small—less than 1% in Mayo's statistics—and the probability of gall-stones reforming in the gall-bladder when this sac is left behind must be exceedingly small—not a single case discovered in 2,000 operative cases collected by Mayo, which figure doubtless includes many cases in which there had been more or less injury to the gall-bladder.

Such prophylactic operation, and in fact the generally early removal of gall-stones, will in the great majority of cases prevent the long train of more or less serious symptoms which are more than likely to follow, as well as the less common but extremely dangerous late consequences, such as septic cholangitis, empyema of the gall-bladder, acute phlegmonous cholecystitis, perforation and peritonitis, acute and chronic pancreatitis, progressive fat necrosis, stricture of the bile-ducts, intestinal obstruction and many others, not the least of which is the development of carcinoma of the gall-bladder or bile-ducts. The suffering and the mortality from such conditions are too well known to require more than mention.

Finally, from a purely operative standpoint, the late operation is vastly more difficult and dangerous than the early operation because of the presence of tough adhesions, the depression due to cholelithia, the tendency to hemorrhage, the necessity for haste because of badly borne anesthetic, the lessened ability of the patient to withstand surgical shock, the presence of highly infectious material in the gall-bladder, etc., etc. Again, complete restitution to the normal cannot be expected to take place if operation is delayed till permanent damage is done the bile passages (contracting scars, strictures, etc.).

To refer again to analogous conditions in appendicitis, I would say that quite in accordance with surgical practice in cases where one or more attacks of appendicitis have been recovered from, modern surgery should consider seriously the propriety of opening the abdomen in all cases where there have been one or more definite attacks of gall-stone colic and the gall-stones removed, for future and more dangerous attacks are quite as apt to occur in the latter as in the former. I do not say that all such patients should be operated upon, but that they should be studied with reference to the advisability of operation, and the operation be done in the absence of definite contra-indication. Furthermore, serious consideration should be given cases of obscure and chronic digestive disturbances, so-called bilious attacks, reflex vomiting, recurrent attacks of indigestion, etc., as to whether the symptoms may not be caused by more or less "quiescent" gall-stones and in the absence of definitely assignable and more probable cause, the abdomen should be opened and the gall-bladder and the bile-ducts explored.

I am led to speak thus strongly as the only logical conclusion to be drawn from a study of my own operative cases. A very large proportion of my operations for gall-stone disease have been late operations and in nearly all of the cases early incision would have shown the presence of the calculi, would have led to their removal and would have prevented the long periods of great suffering and a large mortality. In fact, my mortality thus far has been entirely in cases in which operation was done late in the history of symptoms and after serious complications had arisen as a result of the long-continued presence of the gall-stones.

Furthermore, nearly all of these patients gave the history of symptoms which we can now see would have justified exploratory incision. The delay was not always due to the fact that the patients did not consult physicians; more often than not they had been for long periods under the care of competent physicians sometimes for recurring stomach troubles, and sometimes under the definite diagnosis of gall-

stone disease in one form or another, had been kept on restricted diet, salines, olive oil, etc., for long periods of time. Their symptoms were often relieved, but the final serious complications were not indefinitely postponed. As illustrations of the foregoing, I would report the following 15 cases:

**Case I.—Recurrent attacks of abdominal inflammation, semi-invalidism, exploratory incision, contracted gall-bladder, carcinoma, cure.**

Mrs. C., aged 68, widow of a physician, had had 4 or 5 attacks of inflammation variously diagnosed as appendicitis, peritonitis, etc. The attacks would last several days and were characterized by fever, rapid pulse, pain, tenderness on right side of abdomen. For 5 or 6 years she had suffered with indigestion, stools often fatty, more or less boring pain in right abdomen. One physician thought there was some lesion of the pancreas. Patient was never jaundiced, and her nutrition continued good. Examination showed simply slight tenderness over the cecum; no tumor. Incision showed the appendix normal but it was removed according to request of patient. Further incision over the gall-bladder showed that organ cicatrized and surrounded with dense adhesions, liver notched, a large stone in upper part of cystic duct. The gall-bladder was freed, and removed with the stone, the cystic duct being closed with catgut ligature, and the abdomen closed. Complete relief followed. Examination of the gall-bladder revealed a small carcinoma in its inner wall. It is now more than 6 years since the operation and the patient continues in perfect health. There is no sign of recurrence.

The case may be looked upon as one of accidental cure of carcinoma of the gall-bladder, by an operation done by sheer good luck just in time. Early operation would have prevented the formation of the carcinoma. Mayo has reported 3 similar cases 3 years after operation and 2 recent ones.

**Case II.—Frequent attacks of "biliousness" for many years, some accompanied with pain, sudden choledochus obstruction, operation, contracted gall-bladder, extensive adhesions, chronic cholelithia, hemorrhage, death.**

Mrs. B., large fleshy woman, age 53, had had frequent attacks of so-called "biliousness" sometimes with pain, attributed to over-eating and too rich food, extending over many years and for which she had had medical treatment. Had never been jaundiced. Two weeks after a rather severe attack of colic, she had another one followed by jaundice indicating stone in the common duct. To exclude catarrhal jaundice patient was kept on liquid food and given salines; she was also given pilocarpine to exclude a hypothetical plug of mucus which might possibly have been obstructing the common duct, the patient becoming weaker and weaker day by day with the intense jaundice, and coal-tar narcotics which were given to produce sleep, and the evident sepsis as shown by fever, leukocytosis of 15,000, etc. Operation was done only as a last resort 4 weeks after the jaundice became complete and the patient was all but in extremis. Incision showed a mass of adhesions completely matting together colon, omentum, duodenum and lower surface of the liver. After cutting these sufficiently to expose the apex of the gall-bladder the latter was found cicatrized over a number of small gall-stones. Attempt was made to remove the gall-bladder but separation of the dense adhesions caused so much bleeding that the attempt had to be abandoned, the gall-bladder was opened and the stones removed with what was possible of the mucous membrane of the gall-bladder. The common duct was opened and 4 large stones removed. A drainage tube was inserted and gauze pack, and the oozing surface of liver was sealed with the Paquelin cautery. As the wound was being closed, the patient collapsed and died within half an hour after leaving the operating table. Examination of the wound area after death showed that there had been no concealed hemorrhage, that the common duct had been opened 3 inches above the papilla. Two inches above the papilla there was a marked thickening evidently the point of lodgment of the large obstructing stone with dilatation of the duct above.

This case is a good example of the immense technical difficulties and the dangers encountered when operation is delayed in cases of gall-stone impaction. The whole train of symptoms could have been avoided by removal of the stones before they left the gall-bladder, and the patient would have been in better condition to withstand the shock had operation not been delayed so long after jaundice came on.

**Case III.—Frequent attacks of epigastric pain during 18 years; chronic pancreatitis; fat necrosis; sepsis; death.**

Mrs. B., age 59, very fleshy, had weighed 267 pounds, had had frequent attacks of epigastric pain during 18 years, characterized by vomiting, without jaundice, but with fever and followed by tenderness. Nutrition remained generally good, though digestion was more or less imperfect and patient suffered from frequent headaches. She was sent to the surgeon because of a tumor which was discovered in the epigastrium. The gall-bladder region was tender, and a hard immovable irregular tumor was present in the epigastrium. It was thought to be

carcinoma. Exploratory incision was undertaken because of a recent attack of agonizing pain which was thought to be due to gall-stone impaction and because of the indication to forestall pyloric stenosis if such should be impending. It showed the gall-bladder cicatricial and filled with gall-stones; stomach and pylorus free; the tumor lay behind the peritoneum in the region of the pancreas. On opening the gall-bladder bile flowed and it seemed indicated to unite it to the small intestine to prevent choledochus obstruction by the growth of the tumor. This was done with a Murphy button after removal of the gall-stones, but on exposing the tumor by section of the peritoneum it was found to be a great mass of necrotic fat. The patient died on the sixth day of sepsis in the region of the fat necrosis without peritonitis, the infection being with staphylococci and colon bacilli.

While in this case the death was due to sepsis, which was perhaps preventable, it is significant that the attacks of epigastric pain, with more or less fever and vomiting recurring at frequent intervals for 16 years, were never attributed to gallstones. Undoubtedly the pancreatitis and fat necrosis were due to the damage done by passing gall-stones, and could readily have been prevented by a timely operation. The common duct was thickened evidently by old inflammation.

**Case IV.—Chronic invalidism for 17 years; frequent attacks of indigestion with epigastric pain and tenderness; rupture of gall-bladder; localized abscess.**

Mrs. M., age 51, had been a confirmed invalid for 17 years suffering from frequent attacks of indigestion attributed to over-eating, had constant medical attendance, and was kept on one diet after another with practically no benefit. On one occasion she had been in a hospital for several months and was fed on malted milk and similar preparations. After an especially severe attack with some pain, vomiting and local soreness a tender swelling appeared in the right upper abdomen, evidently a localized abscess, which was thought to be of appendiceal origin. Operation at the end of 2 weeks showed distended gall-bladder with abscess of considerable size between it and the liver; peritoneum free. The gall-bladder was stitched to the peritoneum and opened after 24 hours several ounces of pus being removed. Two weeks later, when the acute process had subsided, the wound was enlarged and 7 immense gall-stones were removed from the gall-bladder, cystic duct and abscess cavity. Although the gall-bladder had been sutured to the peritoneum and not to the skin the fistula failed to close and after 6 months the gall-bladder was removed entire. No additional stones were present, the fistula having remained open because of the chronic inflammation of the wall of the gall-bladder. Patient made an uninterrupted recovery and has been free from her digestive troubles up to the present time—3 years later.

The history of the case makes it evident that the digestive disturbances were due in large measure to the irritation of the gall-stones, and would have ceased had they been removed; the very dangerous conditions which subsequently developed would thereby have been prevented.

**Case V.—Typical gall-stone colic 5 times in 25 years with passage of gall-stones; frequent attacks of less severe pain; constant soreness.**

Mrs. B., age 56, had typical gall-stone colic 25 years ago with passage of great numbers of small stones; 4 subsequent attacks; has been obliged to live on restricted diet ever since, an attack of more or less severe pain invariably following taking of fruit and other easily fermentable foods. She has had more or less constant epigastric pain and tenderness. Patient was very fat, showed no tumor, no jaundice but marked tenderness in region of gall-bladder. Operation undertaken because of a recent severe attack of biliary colic, showed the gall-bladder contracted and filled with stones, the common duct being free. Cholecystectomy was performed but was made very difficult by reason of the anesthetic being badly borne and by very dense adhesions. The cystic duct was drained. Save for some distension, the abdomen presented no untoward symptoms but patient developed a broncho-pneumonia to which she succumbed on the fifth day. Partial autopsy showed broncho-pneumonia, fatty heart and some areas of chronic nephritis.

**Case VI.—Chronic invalidism; operation for strangulated hernia; acute phlegmonous cholecystitis; acute hemorrhagic pancreatitis; extensive fat necrosis; death.**

Mrs. M., age 60, very fat, had suffered for many years with indefinite digestive disturbances, bilious attacks with more or less pain; entered Lane Hospital and was operated on for strangulated umbilical hernia. At the end of 3 weeks, after normal wound healing, when patient was about to leave the hospital she was taken with persistent vomiting. There was no cause evident. She complained of severe pain across the abdomen and rapidly went into collapse, perspiring freely and remaining very weak for some hours. There was no fever and the pulse was but 80 though weak. At the end of 24 hours the pulse rose to 130, the temperature remaining 99°. Next day the pulse was still 130 and the temperature rose to 103°. Patient was given small doses of morphine sufficient to quiet the pain

and repeated enemas containing asafetida in the hope of moving the bowels. Vomiting continued and the abdomen became considerably distended and tender. There was no jaundice and the most obvious diagnosis was intestinal obstruction following the operation for hernia. Operation was demanded in spite of the considerable cardiac weakness and nephritis which was present. Incision was advised but patient consented only after another 24 hours but then faint jaundice appeared and the cause of the symptoms became evident. Karlsbad salts were given and the patient supported by rectal feeding. On the fourth day patient seemed better, the temperature falling to 98.4° and pulse to 120, but towards evening the temperature rose again and on the fifth day patient collapsed, had severe chill, and 3 hours later expired.

Autopsy made by Dr. Ophile showed acute suppurative cholecystitis, acute cholangitis, gall-bladder filled with a large number of small gall-stones, some stones in cystic duct, papilla not lacerated, choledochus free, no stones in intestine, acute hemorrhagic pancreatitis, extensive fat necrosis, fatty heart, necrosis of renal epithelium with some areas of old nephritis. Cultures showed colon bacilli in gall-bladder and cystic duct, colon bacilli and short rods, negative with Gram, in pancreatic duct.

**Case VII.—Repeated attacks of gall-stone colic; passage of gall-stones; two visits to Karlsbad; chronic pancreatitis; extensive fat necrosis; stenosis of mesenteric vein; gangrene of bowel.**

Mr. R., age 53, for many years had recurring attacks of epigastric pain at times very severe; 3 years ago after a particularly severe attack became jaundiced, was in a sanitarium in San Francisco for some weeks; passed a number of gall-stones about a quarter of an inch in diameter. He then went to Karlsbad where he temporarily improved. Even since then he has had frequent attacks of epigastric pain similar to the original attacks, with local tenderness and he got to taking morphine pretty regularly for the relief it gave him. He went to Karlsbad a second time remaining about 3 months, but was not perceptibly improved. His nutrition continued good however so that he recently weighed 225 pounds. On the whole his abdominal discomfort pretty continuously increased till finally without special indiscretion on his part he had sudden severe pain in the lower abdomen with rapidly progressing symptoms of peritonitis. Morphine had to be used in full doses; nausea was constant; the abdomen became rapidly distended, hiccoughs continuous; pulse 128 increasing; temperature 100°; tenderness across lower abdomen in spite of the morphine; complete constipation; great abdominal rigidity. The abdomen was opened as soon as patient could be brought to San Francisco, (on the third day of the attack) patient being by this time slightly jaundiced, pulse 130, leukocytes 11,400. On opening the peritoneum a considerable quantity of thin, brown foul-swelling serum was evacuated and a large loop of the small intestine was seen to be gangrenous. Resection was out of the question because of the condition of the patient. The mesentery was therefore cut across (the absence of bleeding suggested thrombosis of the mesenteric artery) and the loop simply hung out of the abdomen. The intestinal wall was greatly thickened as if by chronic congestion, and the line between the gangrenous portion and the sound portion was not definite. Palpation of the gall-bladder showed its walls thick and a number of gall-stones in the cystic duct. These were milked back into the gall-bladder and the abdominal wound closed about the protruding intestine. The intestine was opened next morning and both ends irrigated to a depth of 18 inches and a quantity of magnesium sulphate solution injected. Retching continuing the stomach was washed out evacuating about a quart of dark fluid. Patient became continuously weaker and died in the afternoon.

Autopsy by Dr. Ophile showed fat necrosis extending beneath the posterior peritoneum as far as the appendix. One process of the cavity containing the necrotic fat surrounded and constricted a large radicle of the portal vein, the lumen remaining about 2 mm. in diameter and filled with a blood clot not many days old. The gall-bladder contained 13 gall-stones averaging 1 cm. in diameter and myriads of minute stones, many of which were found in the common and hepatic ducts. The hepatic duct was dilated to 3 times its normal diameter, the lower portion of the common duct almost obliterated by cicatricial contraction and the pancreatic duct open.

Whether the fat necrosis was due to the attack of 3 years before, when stones were first passed, or to subsequent trouble, is scarcely to be determined; nor can it be said now that the diagnosis could have been made before that time. Still there can be no reasonable doubt that had the gallstones been removed before they left the gall-bladder the whole clinical picture would have been different.

**Case VIII.—Recurrent attacks of vomiting, one persisting for six weeks, gall-stones removed from cystic duct, recovery.**

Mrs. J., age 52, had always been a strong hard working woman; for several years back had had occasional attacks of indigestion with persistent vomiting. No typical colic. When feeling perfectly well and without any assignable cause, patient began to vomit. She had no pain, no chill, no fever and no iotterus but vomited continuously for 5 weeks in spite of frequent lavage of the stomach and other

appropriate treatment. Patient was kept alive by rectal feeding, but rapidly emaciated. The vomitus at first containing a large proportion of bile, later became clear and finally chocolate colored; it was generally acid and would foam on addition of bi-carbonate of soda. Castor oil was passed by rectum which, with the absence of abdominal distress and distension, excluded intestinal obstruction. Pelvic examination was negative, there was no tumor of the gall-bladder and nothing to be made out except a slight degree of local tenderness over the gall-bladder.

Incision showed gall-bladder practically normal, covered with shining epithelium. Two gall-stones lay impacted in the upper part of the cystic duct. Their removal by cholecystectomy sufficed to relieve the persistent vomiting. Patient retained liquid food given by stomach within 24 hours and had no subsequent digestive trouble. The fistula failed to heal, however, and required closure some months later, since when (2 years) patient has been in excellent health.

**Case IX.—Sick headache for many years; frequent attacks of colic and acute indigestion for 15 years; nearly constant distress in upper abdomen; pancreatic cyst; drainage; cholecystostomy, recovery.**

Mrs. J., age 51, had suffered since childhood with sick headaches and for 15 years with acute indigestion, "bilious attacks" coming on every few days, for which she was accustomed to wash out her stomach and with great relief. In fact she learned to ward off the attacks by washing the stomach. Attacks of violent straining and constant pulling sensations in the upper abdomen caused a great deal of distress. She lived on very restricted diet; the least variation from it would bring on an attack. On one occasion 10 years ago she was obliged to go without food for 16 days, a tender tumor appearing in the right side below the ribs (probably distended gall-bladder) but this subsided after a time. Twice within a year she had typical bilious colic so severe as to require morphine.

Four months before coming under my care she discovered a tumor in the upper abdomen a little to the right of the median line. This has gradually increased since. Examination showed a spherical tumor 5 or 6 inches in diameter of the consistency of a tense cyst, situated between umbilicus and navel. It was evidently a cyst of the pancreas. Operation confirmed the diagnosis but showed a gall-bladder filled with gall-stones but otherwise not much damaged; bile ducts free. The stones were removed by cholecystectomy, and the pancreatic cyst drained. The pancreas itself seemed harder than normal. Recovery was uneventful and up to the present time, 2½ years, patient has enjoyed perfect health, has gained 30 pounds or more in weight and has been free from the pulling and straining previously complained of and can eat any ordinary food with impunity.

Whether there is any etiological relation between the gall-stones and the pancreatic cyst is not to be definitely determined, but the cyst certainly followed the gall-stone colic as well as the chronic pancreatitis.

**Case X.—Acute cholecystitis; cholecystectomy; recovery.**

Mrs. C., aged 40, had generally had good health, and gave a history of nothing more than indefinite digestive disturbances. When feeling perfectly well had sudden attack of inflammation in the right upper abdomen, with pain, tenderness, muscular rigidity, tumor of gall-bladder; leukocytes 18,000. On the sixth day when the inflammation had somewhat quieted down the abdomen was opened, the thickened gall-bladder was removed and the cystic duct drained. The gall-bladder contained half a dozen large stones; the ducts were free. Convalescence was uninterrupted; patient left hospital on the 21st day.

**Case XI.—Frequent attacks of gall-stone colic; complete choledochus obstruction; cholecystectomy; carcinoma; death.**

Mrs. B., age 50, had had frequent attacks of typical biliary colic besides much dull pain for which she was obliged to take codeine; was operated upon in Chicago, the gall-stones removed by cholecystectomy. Subsequently, jaundice appearing, the common duct was opened and a stone removed from it and cholecystectomy performed by the same surgeon. Patient was well for 3 years when jaundice came on again without pain, chill or fever. Treatment was instituted on the supposition that the jaundice was catarrhal.

The choledochus obstruction was complete and continued without cessation so an exploratory incision was determined upon. It showed a cyst pressing on the hepatic duct but exploration of the common duct through an incision and again through the duodenum showed no other cause for the obstruction than the cyst. This was evacuated and drained and patient was greatly relieved for some months. The contents of the cyst on examination showed epithelial debris which suggested carcinoma. Gradually the jaundice returned (it had never quite disappeared but the itching was relieved) but the stools always contained some bile. Patient died 10 months later. Autopsy showed extensive carcinoma of the liver, but not involving the main ducts.

**Case XII.—Several attacks of biliary colic; long periods of indigestion; chronic cholecystitis; choledochus obstruction; removal of stone; recovery.**

Mrs. V., age 50, had suffered numerous attacks of colic and digestive disturbances for several years. Complete choledochus obstruction came on and after 4 weeks patient came to operation. The gall-bladder was contracted over a number of small stones and was removed and a large stone obstructing the common duct was removed by incision. The duct was drained and convalescence was

without incident. Patient was seen 6 months after the operation and was completely relieved.

**Case XIII.—Chronic indigestion; frequent attacks of vomiting; some dull pain; one or two attacks of colic; rupture of gall-bladder; cholecystectomy; recovery.**

Mr. J., age 40, had suffered with digestive troubles for 20 years, had had frequent attacks of vomiting without apparent cause, some dull pain quite persistent, one or two attacks of severe colic, no jaundice. Patient had to live on liquid food a good part of the time and finally had to give up his business. One day he was seized while on the street with violent pain in the abdomen which required a grain of morphine to control; the abdomen became rapidly distended and tender throughout and the pulse rose above 120. After 24 hours, when seen by me, the abdomen was softer and the bowels had been moved with castor oil. The greatest tenderness was over the appendix and rectal examination showed tenderness of the pelvic peritoneum. A diagnosis of acute appendicitis was made and patient brought to hospital for operation. Incision showed the appendix normal but it was removed according to patient's request. There was some peritoneal fluid stained with bile which showed that the gall-bladder had ruptured but the glistening peritoneum excluded severe peritonitis. The incision was closed and the gall-bladder exposed by a second incision. Being full of stones and having perforated at its apex it was removed, and the cystic duct drained. Convalescence was uneventful and since then patient has been greatly relieved and can now eat ordinary food with impunity.

The bile in the peritoneum and the contents of the gall-bladder showed no bacteria in culture and in smears and the peritoneum gave no reaction when exposed in the operation.

**Case XIV.—Recurrent cholecystitis; colic; chronic cholema from choledochus obstruction; cholecystectomy; exploration of common duct; death.**

Mr. C., age 60, with large fat abdomen had had years of digestive disturbances, with colic; had passed gallstones; was operated upon 2 years ago by a San Francisco surgeon who removed some 50 gall-stones from the gall-bladder by cholecystostomy. Both fistula and jaundice persisted, making it evident that there was a stone in the hepatic duct which had been overlooked. Operation during cholelithia of 2 years duration was further made very difficult by the extensive and very dense adhesions; the fat abdomen, and because of a weak heart; the anesthetic was badly borne. The common duct was opened, a stone 1 cm. in diameter was removed, the gall-bladder also. The cystic duct was drained. Patient did not rally from the depression of the operation though the blood lost was not great, and died next morning. Autopsy not permitted.

**Case XV.—Chronic indigestion; frequent attacks of colic; tumor; cholecystectomy; recovery.**

Mr. H., age 55, had had indigestion for years, often in painful attacks; was obliged to live on restricted diet; at times took nothing but milk for weeks; was never jaundiced. Examination of stomach contents on one occasion showed absence of hydrochloric acid. There was some dilatation of the stomach and an irregular tumor was evident to the right of the median line, which was thought to be carcinoma of the pylorus. Incision over the tumor showed it to be a distended gall-bladder covered with adherent coils of intestine and filled with gall-stones; the ducts free. The gall-bladder was removed and the cystic duct drained. Recovery was uneventful, patient leaving hospital in ambulance at the end of a week, the fistula closing soon afterwards. Since then patient has been able to eat all sorts of foods without distress although it is but a few weeks since the operation.

A brief summary of these 15 cases is appended.

The average duration of symptoms definitely attributable to the presence of gall-stones before operation in these cases was 12 years. I have no doubt that if the cases had been carefully studied from the beginning the diagnosis of gall-stone disease could have been made much earlier. Of the 15 cases, 8 recovered and 7 died. Three of the deaths may be ascribed to the operation, but they were all in very fat people, one of broncho-pneumonia and two of hemorrhage and shock, both cases with prolonged icterus, and extensive adhesions, and both cases so depressed that they would have died very shortly without operation; in fact, in both cases operation was done as a last resort. The same is true of a fourth case in which multiple abscesses developed after operation at the site of extensive fat necrosis. The other causes of death were acute hemorrhagic pancreatitis, stenosis of mesenteric vein with gangrene of the bowel as the result of fat necrosis and carcinoma of the bile ducts, one case each.

These 15 cases exhibited the following complications: chronic cholecystitis with cicatricial contraction of the gall-bladder, 6; carcinoma, 2 (one cured); perforation of the gall-bladder, 2; chronic cholema, 2; acute hemorrhagic pancreatitis, 3; chronic pancreatitis with fat necrosis, 4; pancreatic cyst, 1;

acute phlegmonous cholecystitis, 2; persistent uncontrollable vomiting, 1; cicatricial stricture of choledochus, 1; adhesions dense and extensive enough to make operation hazardous, 7. In these complications may be seen the determining cause of the mortality in most of the seven fatal cases, and the immediate cause of most of the suffering in the whole series. Such complications can be prevented by timely operation, and by that alone.

## THE SURGICAL TREATMENT OF PANCREATIC COMPLICATIONS IN GALL-STONE DISEASE.\*

By ANDREW STEWART LOBINGIER, M. D., Los Angeles.

AS EARLY as 1892 Mr. Mayo Robson had observed the frequency with which gallstones in the choledochus were associated with enlargement of the head of the pancreas. Körte had called attention to the same fact, and Lancereaux, in 1898, expressed his belief that a stone lodged in the ampulla of Vater was a strong etiologic factor in the infection of the pancreas. In 1901 Opite published his brilliant clinical observations and subsequent experimental studies on the partial obstruction of the ampulla by a small gallstone. He was the first to demonstrate the influence of a small-sized concretion in producing regurgitation of bile through the duct of Wirsung, with a sequel of pancreatitis. Since then much of the pathology of the various forms of pancreatitis hitherto obscure has become well defined. Recent contributions of a clinical character, which are continually appearing in the literature, have added greatly to the interest in the study of the pancreas in disease.

The necessary limits of this paper impose a very difficult task, and compel the most cursory treatment of a field possessing a wealth of pathologic and surgical interest.

**Diagnosis.** The symptoms of acute hemorrhagic pancreatitis may be so acute and agonizing as to overwhelm the patient. The attack is ushered in with violent vomiting, intense pain in the epigastrium, and occasionally collapse. The recti become rigid, and within 24 hours a tumor forms above the umbilicus. This tumor may not be apparent if the rigid recti and intense pain render the abdomen impalpable, or if a tympanic stomach intervenes. In the differential diagnosis, phlegmonous cholecystitis, perforation of the stomach or duodenum, intestinal obstruction or acute gangrenous appendicitis will need to be considered. Each of these can usually be excluded by the anamnesis.

Reginald Fitz has given us an intelligent picture in saying that, "Acute pancreatitis is to be suspected when a previously healthy person or sufferer from occasional attacks of indigestion, is suddenly seized with violent pain in the epigastrium, followed by vomiting, collapse, and in 24 hours by a circumscribed epigastric swelling, tympanic or resistant, with a slight rise of temperature."

Halsted regards excessive pain and cyanosis of the face and abdomen as typical. The pain which at first was definitely in the epigastrium, later becomes general; the vomiting is a dark bile-stained hemorrhagic fluid; the temperature is erratic and the pulse rapid and weak. Intestinal obstruction from pressure of the effusion on the duodenum may complicate the symptom complex. Fat may be found in the stools and sugar in the urine. The former will depend upon the dissemination of the pancreatic ferment in the tissues; the latter upon the involvement of the islands of Langerhans.

**Treatment.** In the acute form of pancreatitis, commonly known as acute hemorrhagic, it will be necessary to remember that in certain of the less severe cases the patient may recover without surgical interference. On the other hand there is a type representing the other extreme, where the most prompt and

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skillful operative measures prove futile, or where the hemorrhage is so great as to overwhelm the patient before he can be placed in a hospital.

There is a class, however, which presents a more favorable aspect, where the immediate shock, and the extreme pain and vomiting can be successfully combated, and the patient energetically prepared for an early evacuation of the blood and infected exudate.

The mortality in acute hemorrhagic pancreatitis has been great. It can only be lowered by a prompt and accurate diagnosis and by a more active preparation of the patient for early operative relief. The blood which exudes becomes speedily infected, and the absorption from this highly toxic culture will overwhelm the patient unless early and skillfully applied drainage is established. There is no intra-abdominal condition where adequate and modern methods of drainage are more imperative.

At this time it would be impracticable to interfere with any obstruction which may be in the ampulla. Every effort should be exerted toward expeditious and effective evacuation of the clot and establishing drainage. The site of drainage must be determined by the conditions found in each case. As a rule the effusion is more accessible anteriorly through the gastrocolic omentum. Large Penrose drains surrounded by a well-placed cuff of mildly iodoformized gauze is most effective. Mr. Robson prefers dorsal drainage through a stab-wound in either the right or left costa-vertebral angle. Being extra-peritoneal, there is much to recommend it, unless the peritoneum is ruptured and the exudate is free in the abdominal cavity. In the latter event the cavity should be freely flushed with sterile water, Penrose drains placed in the pelvis as well as posterior to the stomach, and the patient put in the semi-sitting posture.

It has been the privilege of the writer to observe 3 cases of acute hemorrhagic pancreatitis. None of the patients was operated upon, and all of them came to autopsy. Two of them were correctly diagnosed, but shock was too great to admit of operation. One lived 2 days, one 3, and one 5½ days, after the acute seizure. The latter case was not correctly diagnosed. It presents points of interest making it worthy of record, and is reported below:

R. E., 52 years of age, was attacked suddenly while bending over at work, with acute colicky pains in the epigastrium. He vomited several times, and became faint from the intense pain, which was finally relieved by injections of morphia. He was put to bed, and the following day the pain recurred, but in milder form. The vomiting was more frequent, though less violent. A slight swelling could be felt in the epigastrium, which was dull on percussion. It was exquisitely tender, and the tenderness extended upward to the gallbladder and toward the right renal region. The temperature was not above 100° during the first 3 days. The pulse, at first extremely rapid, fell to 120, and remained at 112 to 116 until the fifth day. The swelling in the epigastrium steadily increased, extending toward the right and left flanks, more to the right than to the left. It was difficult to palpate, owing to the rigidity of the abdominal muscles. On the fifth day meteorism became extreme. The bowels, which had in the beginning of the attack been opened with difficulty, were parastic. The urine was scanty and high colored. It contained a trace of sugar. The vomiting became aggravated and exhausting, the pulse increased to 160, and the temperature rose to 104°. The symptoms of intestinal obstruction being most apparent. The vomit, at first a dark bilious-colored fluid, became fecal in character. Operation, which in the beginning had been suggested but was declined by the patient, was now asked for; but it was clear that the time had passed when such a measure could be borne, and it was so explained. The patient failed rapidly, and died at the end of the sixth day.

The autopsy showed the abdominal cavity full of dark, bloody, purulent matter, which poured out of a rent in the peritoneal covering of the pancreas. The lesser omental cavity was filled with this pasty purulent material. There were areas of fat necrosis in the omentum. The pancreas was necrotic, and lay like a discrete, gangrenous mass across the posterior wall. It was so disorganized that microscopic examination showed nothing but the reticulum, with remnants of acini and degenerated and disintegrated clusters of fatty cells, where the islands of Langerhans should have been. The gallbladder had a few small stones in it, and some fine sand, but the common and hepatic ducts were free.

If a concretion had been in the ampulla. It had slipped into the duodenum and was lost. The choledochus was edematous and thick, and the gallbladder showed similar

edema of the mucosa. The duodenum was enormously distended and necrotic. There was a constriction of the gut at the ligament of Treitz. The stomach and pylorus were congested and the mucosa thickened, but there were no ulcers. There was beginning general peritonitis.

This patient had given no history of gallstones. He had never had jaundice. He gave an indefinite history of hematemesis. It was not clear, and the lungs being at the time free, it was thought it might have been from the stomach. This view was strengthened by a long history of indigestion and hyperchlorhydria. The diagnosis was never definitely determined, but it was thought a duodenal or gastric ulcer had perforated and discharged into the lesser sac, and that there was intestinal obstruction from the ensuing peritonitis. The pancreas was thought to be secondarily involved. At this day such an error would be impossible.

**Chronic Pancreatitis. Pathology.** Chronic pancreatitis was formerly considered a rare affection, but we now know it is more frequently met with than the acute variety. The pathology of the chronic form is intimately associated with obstruction of the choledochus and infective cholangitis. It may follow gastric or duodenal ulcer, or gastro-duodenal catarrh, or result from concretions in the ducts of Wirsung and Santorini. The infective material thus gains entrance to the pancreatic ducts, and causes an inflammation of the parenchyma as well as the stroma. Ople has classified the inflammatory changes into interlobular and interacinar.

Hyaline degeneration frequently occurs in the islands of Langerhans. It is associated with diabetes mellitus. Extreme cirrhosis may follow hypertrophic changes in the stroma of the gland. Ople has noted the frequency of the occurrence of chronic pancreatitis in alcoholics and its association with cirrhosis of the liver. Hausemann, Lefas, Dieckhoff, Friedreich and Oser have made similar observations.

**Diagnosis.** The symptoms of chronic pancreatitis are closely allied to those of obstruction in the choledochus and cancer of the head of the pancreas or of the liver. It cannot always be differentiated from obstruction in the choledochus, since the latter is very often present as a primary etiologic factor. Surgical treatment is indicated in each; it is therefore rarely of vital importance to differentiate the two conditions. Should hypertrophic changes exist, a tumor can sometimes be made out near the head of the pancreas.

Pain, rigors, cholemia, sweats, vomiting and fugitive temperature are features of each. The character of pain and the point of greatest tenderness will sometimes aid in declaring the condition of the pancreas. Central epigastric tenderness, with tumor, are characteristic in the latter. In cancer of the head of the pancreas the pain is not so paroxysmal, the onset is gradual, the cholemia is more intense and constant, and a marked tumor results from the obstruction of the choledochus and distension of the gallbladder.

In cancer of the liver, icterus is less pronounced, temperature and paroxysmal pains are absent, and there is an irregular and nodular feel to the edge of the liver. Acites may be present in either condition, but is more abundant in carcinoma of the liver. The lymphatic glands in the small omentum are enlarged, but are not easily palpable until the abdomen is opened. The presence of glycosuria and fat in the stools may aid in the diagnosis of chronic pancreatitis.

**Treatment.** This consists, when possible, in clearing the common and pancreatic ducts of their obstructions. Should a stricture exist in the common duct, whether benign or malignant, either partial choledochoectomy or cholecystenterostomy must be done to relieve the obstructed bile. Mayo has recently reported 3 partial choledochoectomies. In one case the lower segment of the common duct was excised and the proximal portion grafted into the duodenum.

In many cases gallstones will not be found in the ducts at operation, though evidences of their presence at an earlier date may be unquestioned. These patients are greatly benefited by a cholecystostomy, and this operation affords an opportunity to remove any concretions which may lie obscurely in the gallbladder. If this organ is contracted and thickened, as is frequently the case in obstruction of the chole-

dochus, it should be removed and a drain placed in the cystic duct. Mr. Robson urges the importance of cholecystostomy in chronic pancreatitis. This drainage should be maintained until the bile by repeated cultures is shown to be sterile.

Choledochotomy for stone, whether direct or into the ampulla via the duodenum, must always be associated with a positive mortality. The very nature of the involved pathology which terminates in the crisis demanding relief is formidable.

The prolonged cholelithia, the lowered vascular tone evidenced in petechia, the reduced hemoglobin and extreme anemia leave the patient little resistance to withstand the shock of operation.

Most of these patients can be materially improved by careful preparation with salt solution, tonics, good food, hot Sprudel and, later, calcic chloride, for a proper period before operating. At the time of operation every modern measure for conserving vital energy and combating shock should be employed. The patient should be kept dry and warm on the table by a hot water or electric pad. Infusion of salt solution should be early. All bleeding points should be ligated. Drainage should be carried to the choledochus, if sutured, or into it if left open. If the calculus is in the ampulla and cannot be dislodged, it must be reached through the duodenum and by incision of the papilla, after the technic of McBurney. All the speed consistent with safe work should be used, and no detail to provide against embarrassment or delay should be thought trivial.

The mortality in chronic pancreatitis need not be high if precautionary measures are adequately observed. It will be growingly lower as an intelligent knowledge of its complex pathology is acquired and enforced in early diagnosis and surgical remedy.

#### DISCUSSION.

**Dr. H. C. Moffitt, San Francisco.**—Although fully realizing the help surgeons have been in furthering our knowledge of pathological conditions about the gallbladder and of the therapy of such conditions, yet it is wise to emphasize the fact that all cases of gallstones do not necessarily call for operation. The general state of the patient, his ability to care for himself and follow rules of diet and methods of cure at home or in Carlsbad should weigh heavily in the decision. Stones in patients of the ages of 65 or 70 which give only occasional pain and mild attacks of cholecystitis certainly are better left alone.

Afterresults of surgical treatment do not seem to me as good as pictured in the average surgical report; medical men see unsuccessful results perhaps more than surgeons. I have 2 or 3 patients reporting now who have quite as much pain from their adhesions as they had from gallstones; it is true they have been freed from dangerous complications in the future, but their present existence has not been benefited. Not only should the surgeon weigh carefully the condition of his patient before operating, but it seems to me he should give more attention to the condition during operation. I have seen unwise attempts to do too much at one time in gallbladder cases as in other abdominal conditions. In one woman whom I have in mind, the surgeon insisted on taking out a normal appendix at the time of the gallstone operation, with the result of much added shock and an infection in the appendix region which lengthened convalescence by many weeks.

For my small series of cases it would seem much wiser to save the gallbladder, unless extensive disease contraindicates it. During the last weeks I have seen a young woman return with obstructive jaundice, due in all probability to a common duct stone which had worked down from the cystic duct after cholecystectomy a year ago for stones in the gallbladder. It would be a great comfort now to have the gallbladder available for drainage.

A great number of people who have stones latent in the gallbladder keep perfectly comfortable if they

attend properly to diet, and occasionally take home treatment with Carlsbad water and salts, or an occasional course of treatment with olive oil or sodium salicylate and benzoate. I believe that Koenig and Kocher are still content to carry their gallstones with them, and it seems too radical to advocate operation in every case of cholelithiasis. One must consider the patient as well as the gallbladder, and avoid hard and fast convictions on either side.

#### A MORE SIMPLE TECHNIC IN HERNIOTOMY.\*

By O. O. WITHERBEE, M. D., Los Angeles.

THE radical cure of inguinal hernia has been the subject of perhaps as many essays as that of any procedure in the entire category of surgery. The reason is not that success has failed to attend the efforts of the modern surgeon in his endeavor to effect a cure, nor is it the result of variable complications arising in individual cases. Why, then, this array of surgical technic to close what is but little more than a simple breach in the abdominal wall? Is it because the method of one man is superior to that of another? Such is not necessarily the case; good results obtain alike from the various operations that have stood the test sufficiently to enjoy a fair degree of popularity.

All are reasonably successful if done in a painstaking manner with aseptic precautions. Yet the average man doing a general line of work, though fairly familiar with the modern methods of surgery, will invariably give a guarded prognosis as to the immediate results of herniotomy. While this is true of the average man, there are many others who will not attempt the operation at all. Reason for this hesitancy may be explained from different standpoints; either the operator lacks familiarity with the anatomy of the parts, or else he is unable to satisfactorily carry out the technic as laid down by the masters of the art.

From the first charge he should at least, through common courtesy, be held exempt. The second, however, is a different matter. Valid excuses may be presented for failure to comply with the requirements necessary to make the classic operation a success. Unwholesome surroundings, the lack of trained assistants and the absence of suitable material throw a dismal light over the field of hernia operations, and under such circumstances only the presence of a dangerous condition would induce the man of limited experience to interfere.

But why is a breach in the abdominal wall at this locality more difficult to correct than elsewhere? A median line incision may be closed in most any haphazard way, and the patient is relatively sure to have a satisfactory result. Little, too, do we expect suppuration here, and the operation may be conducted without the most rigid aseptic precautions. This, however, does not hold true in the inguinal region. Either the process of absorption is materially retarded or else the natural resistance of the tissues to microbial invasion is for some reason lessened in these parts. Certain it is that foreign material is not handled so kindly as in other localities, to which the discouraging experience of many men will testify who give their statistics without reservation.

Again, it must not be forgotten that in the radical cure of inguinal hernia, we endeavor to close a natural breach whose boundaries do not and never have remained in opposition. It is virtually a plastic operation in which the flaps are not freed from their original positions, but are expected to unite while under tension and oftentimes in vigorous functional activity associated with abdominal movements.

In the average abdominal section, the stitches after the first few days are scarcely more than passive. Agglutination quickly takes place and firm union speedily follows. Such is not the case in the hernia operation. The tugging on the stitch here never ends

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until one of three things takes place: union is complete, the stitch is absorbed or sloughing has occurred. This being the case, one can readily realize the necessity of absolute cleanliness and the use of the best material.

It is well understood, however, that absolute cleanliness is an impossibility. With our present knowledge of aseptic and antiseptic precautions, no surgical operation can be performed without the entrance of micro-organisms into the wound. If from no other source, they are carried by the scalpel from the skin into the tissues beneath, while millions are scattered broadcast from the mouths and nostrils of all in attendance.

If this is true, we must rely, in a great measure at least, on the resistance of the tissues to the action of the infectious material introduced. The capability of the tissues to meet this requirement will depend very largely on their blood supply and the amount of abuse to which they are subjected. Enfeebled circulation or any unwarranted interference with the blood supply is a serious impediment to primary union, particularly in all regions where the tissue change is slow. That there is a difference in this regard between localities subject to surgical interference, we may, for example, consider the apparent immunity of the face and scalp to these retarding influences as compared with the inguinal region now under discussion.

Abuse of the tissues is certainly a factor of no small importance, and in that respect we should discourage all unnecessary dissection and manipulation. Bruising of the parts largely destroys or obliterates those channels through which absorption takes place, and while it thus retards the process of repair, it promotes suppuration by developing a condition favorable to microbial action. Should the tissues be additionally burdened by the presence of foreign substance of animal origin, thereby overtaxing the power of absorption, it is but reasonable to suppose that micro-organisms having once entered the wound, will meet with much less resistance than they would otherwise encounter. Wounds of the face and scalp may receive any amount of scrubbing and have their surfaces smeared by discharges from the mouth, yet they are closed with whatever suture material is at hand, and the results are almost universally successful. Any practitioner of limited experience may do such work, and with the fullest assurance give a favorable prognosis. On the other hand, he would put a patient on the train and send him 50 or 100 miles to some specialist rather than cut down and liberate a strangulated hernia for fear that he could not properly close the wound and effect a cure.

I know men who would, without hesitation, perform appendectomy, yet would not attempt radical operation for inguinal hernia so long as there were any possibility of controlling it by the use of a truss. This is an unfortunate state of affairs, and one that certainly merits an earnest endeavor to overcome the difficulty. What man of his own choosing would consent to wear an artificial apparatus to hold himself together for the remainder of life if he had the positive assurance that a 3 weeks' lay-off would rid him of the contrivance and put him on an equal footing physically with his fellow man?

Members of the medical profession are largely responsible for the prevailing opinion among the laity that a man's chances are far better while wearing a truss than they would be were he to undergo an operation. The same man would readily consent to take an anesthetic and have a bone set or wired if his physicians earnestly recommended it, yet he is persuaded to plod on through life with a hole in the bottom of his anatomy through which his vital organs are seeking to escape, and which may any day terminate his existence. Can we not devise a technic whereby the man of average surgical experience can perform herniotomy, and with reasonable assurance give a favorable prognosis?

Let it be borne in mind that I do not wish to criticise the classic operation for the correction of this deformity, nor do I presume to teach surgery to those who are thoroughly schooled in the art, but I do unreservedly take the stand that all men doing a general line of work should be able to perform certain surgical operations encountered in their own practice. Especially is this true when in remote localities emergencies arise which demand early decision and prompt action.

I am glad in watching the literature to note a swing of the pendulum toward simpler methods. There has long been a disposition on the part of leaders in the art to complicate technic in surgical work until the average man finds himself not alone inadequate from lack of experience, but embarrassed by the absence of suitable material, proper assistants and the necessary instruments to carry out the prescribed measures. My reason for preparing this paper is not so much with the object of presenting some new method as it is to explain the cause of hesitancy on the part of many men to embrace opportunities in their professional work. However, it is but natural that I should attempt some solution of the problem set forth, and in so doing, shall endeavor in a concise way to outline a simple procedure whereby many of the disadvantages already enumerated may be effectively and successfully avoided.

In considering what may be done, it is necessary first to review briefly those structures on which depends the integrity of the abdominal wall in the inguinal region.



Fig. 1. Represents aponeurosis of external oblique which, in this location, is but a thin apron-like formation of fibrous tissue.

At the base of our field of operation we have Poupart's ligament, from near the middle of which arise the lowermost fibers of the internal oblique. These sweep upward and inward, arching across the cord just below the internal ring. From this point they are continued downward in a direction nearly parallel with a line midway between the outer border of the rectus and Poupart's ligament to a common insertion with the transversalis on the crest of the pubic bone. The space thus partially circumscribed by this section of an ellipse represents the natural breach in the abdominal wall.

The only structure left to resist the bulging forward of the peritoneum in this area is the transversalis

fascia, which, though re-enforced where it surrounds the cord, is but a frail barrier compared with the heavier muscles higher up.

The anterior wall of the so-called inguinal canal is represented by the attenuated fibers of the external oblique which in this locality is but a thin apron-like formation of fibrous tissue. Functionally it serves somewhat to check the hernia in its descent, but in nowise does this muscle operate to prevent its origin. This fact may be readily appreciated by passing the finger through the external ring in any given case.

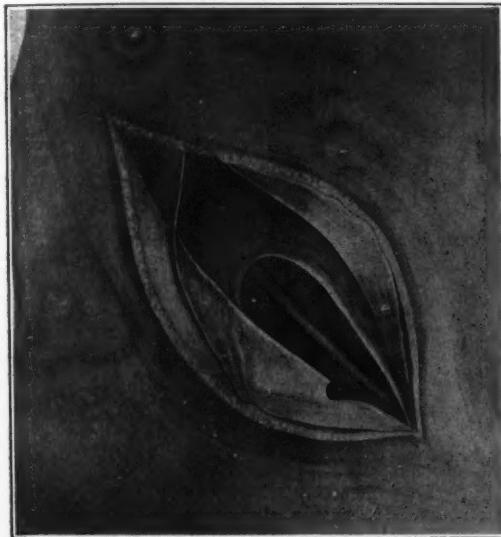


Fig. 2. Represents the breach in the internal oblique as found in the normal condition.

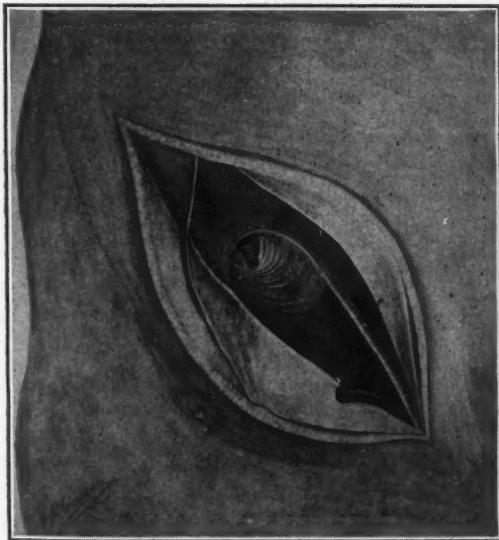


Fig. 3. Represents breach in internal oblique extending higher than usual, thereby exposing the opening in the transversalis fascia which favors production of hernia.

Much then depends on the integrity of the transversalis fascia, and should the internal ring open below the arched fibers of the internal oblique, or in other words communicate directly with this inter-

muscular space, we may expect a hernia to develop on the slightest provocation.

So long as the upper ring is securely covered by the internal muscle, the oblique, inguinal hernia is an impossibility. The direct variety due to rupture of the transversalis fascia may be sustained as a result of intra abdominal pressure, but even this is equally as impossible if the internal oblique can be firmly united with Poupart's ligament.

It matters not whether the cord be transplanted so long as the above named structures remain in apposition. Yet this same procedure is the great stumbling block at the present time, and the one which is indirectly responsible for so many failures to perform the operation and for the disastrous results in the hands of incompetent men.

Leave the cord alone and spare the tissues that unnecessary drubbing attending its manipulation. There can be no objection to preserving the natural relations of the parts, and there is certainly every reason for the preservation of the tissues. If interference with the cord is not necessary, then the operation is half done at the beginning. It is conceded that the majority of the recurrences take place at the internal ring, due in most cases to fatty or atrophic changes in the internal oblique. Yet in view of this fact, it is strongly urged that the cord should be brought through at this point, presuming thereby, it would appear, to provide greater resistance than could be afforded by firm union with unbroken continuity.

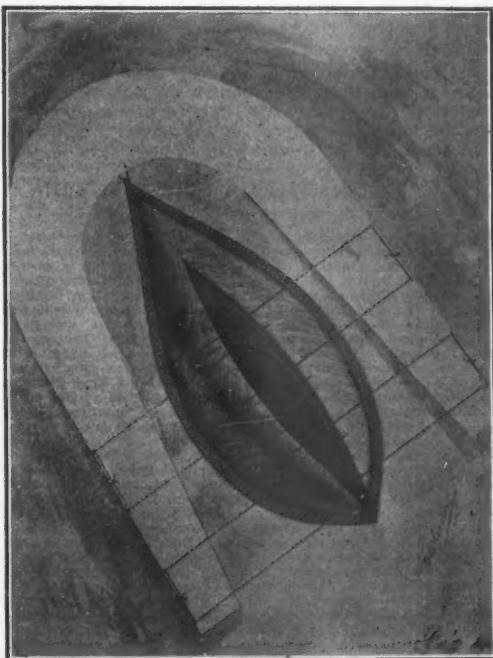


Fig. 4. Sutures in position which, when tightened, draw the internal borders of the external and internal oblique muscles firmly against Poupart's ligament. The sutures thus pass horizontally through adipose tissue and emerge from the skin at the outer borders of the plate.

It is also claimed by many that the presence of the cord back of the internal oblique is responsible for recurrences at the external ring. However, such recurrences are extremely rare, and granting their possibility, we must at the same time admit that they are much less likely to develop than would a hernia in a normal individual in whom the inguinal breach had never been repaired. I have never seen such a

recurrence, and I never expect to see one so long as the valve-like effect of the transversalis fascia is preserved by a suitable relation with the posterior surface of the internal oblique. It is also unfortunate that in transplanting the cord, it should be allowed to monopolize so large a surface of Poupart's ligament. The latter can be turned to a far better purpose by bringing in contact with it as large an area as possible of the internal oblique.

Poupart's ligament is a dense fibrous substance of a white glistening appearance, with a very sluggish circulation which greatly interferes in its union with other tissues. At best it is a frail structure considering the part it plays, and we should endeavor in all ways to effect the strongest union between it and the structures opposite. Due precaution should be taken that the sutures do not interrupt the blood supply, else sloughing will occur at the expense of approximation. To overcome this, I have used exclusively the figure-eight suture, which, if properly inserted, cannot be adjusted with sufficient tension to stop the circulation. It has the additional advantage of being removable, and consequently does not overburden the power of absorption.

To insure fixation and at the same time relieve the skin from undue pressure, a U-shaped plate is employed, to the arms of which are attached the sutures after they emerge from the skin. Four silk worm gut sutures thus introduced will effectually approximate both layers of Poupart's ligament with the external and internal oblique, the transversalis and rectus if necessary, and will maintain their approximation for an indefinite period, or until firm union has unquestionably taken place.

#### DISCUSSION.

Dr. Walter E. Bates of Davisville said that he, for one, as coming from the country districts where no hospital is readily at hand, was very much pleased with the technic as offered by the author. It struck him as being a very simple plan of procedure.

#### CASE OF ERYTHEMA MULTIFORMIS.\*

By ALEXANDER GARCEAU, M. D., San Francisco.

In presenting this patient, A. M., age 27, to your clinical observation I wish to illustrate a case of erythema multiformis in a state of complete evolution. The interest in this case is not so much that it varies from other cases of its kind, except, perhaps, in presenting buccal lesions of the lips, of the eyelids and the classical lesions on the backs of the hands, in fact presenting *de omnibus*, a typical case; but there exists an etiological factor of some interest. He has suffered from a urethritis, not gonorrhreal, since last November, and it was beginning with this source of irritation that he had his first attack and showed the first cutaneous manifestations. I did not see him until this, the third recurrence of the disease, a few days ago, when he was first referred to me by Dr. Geo. L. Eaton of this city.

This attack, like the previous ones, was ushered in by febrile symptoms which quickly subsided as the erythema made its appearance. The only inconvenience he has felt at any time is the burning sensation on the backs of the hands, which is imperceptible at the present time. You all know that the eruption which follows the febrile symptoms shows a marked exudation into the cutaneous tissue, and frequently includes the papular, annular and marginate forms of exudative erythema. This patient presents the papular and macular types, with the central deep violaceous target-like appearance which stamps it the unmistakable erythema iris. I have not the allotted time to give this subject all that is of interest of etiology and treatment that a proper paper would cover. The treatment is based largely on the etiological factors in individual cases. Kaposi claimed that we are unable to prevent the first eruption or subsequent relapses, or to accelerate the involution of the lesions, and that treatment is superfluous. Dr. Granville MacGowan, of Los Angeles, has recently given us, in an article in the "Journal of Cutaneous Diseases," February 1, 1905, a valuable experimental study of the use of epinephrin (adrenalin) solution internally in cases of erythema multiformis. He gives it in 10 minims doses every 2 hours for a few days, and illustrates its results by reporting several cases where it has shortened the course of the disease. Dr. MacGowan says in the therapy of epinephrin in these cases, it is sufficient to assume that the subarareolar capsules furnish to the blood an alkaloid, epinephrin, which by its presence prevents leakage of their contents from terminal blood vessels. I have not placed this patient on this treatment yet, but propose to do so as theoretically it appeals to me as the proper remedy in this class of cases.

\*Presented to the San Francisco County Medical Society.

#### A CASE OF CEREBRAL ABSCESS OF OTITIC ORIGIN—OPERATION—APPARENT RECOVERY—RELAPSE—OPERATION—DEATH—AUTOPSY.\*

By HILL HASTINGS, M. D., Los Angeles.

The complete history of the case is as follows:

Mrs. B., aged 35, sought treatment October 22, 1904, at the Ear Clinic of the Medical Department of the University of Southern California, and was in my care as assistant to Professor W. D. Babcock, in charge. She gave the following history: One week before, following a cold in the head, the right ear became stuffy up, accompanied by severe headache. For 3 or 4 days there had been a purulent discharge from the ear, and pain and tenderness in the mastoid, sufficient to prevent sleep. The general history was negative.

Examination showed a muco-purulent discharge (a smear from which contained diplococci); infiltration and sagging of the postero-superior canal wall, and an inflamed, bulging ear drum, with a small insufficient perforation. The mastoid showed a trace of edema in the post-audicular fold, and moderate tenderness on pressure over the antrum and tip. The temperature was 100°, and pulse 90. The drum membrane was incised; calomel and salts were given, and rest in bed, with irrigation of the ear every 2 hours, ordered.

By the following day the pain had eased up, the aural discharge was free, the temperature was 99°, pulse 64; but the mastoid tenderness had not changed. This condition remained the same for two days, when, on account of the increasing tenderness, a mastoid operation was advised.

Operation, October 26, 1904, at the County Hospital (with the permission and assistance of Dr. Babcock). The cortex was found hard and not perforated; the subcortical cells contained greenish yellow muco-pus (smear from the contents of 1 large tip cell showed streptococci); the antrum was full of muco-pus. The zygomatic cells contained inflammatory mucoid material; the dura over the antrum was exposed to a small extent on removing softened bone, and found normal. All the cellular structure was removed, including the tip, down to the hard bony wall covering the sinus, which was not exposed. The mastoid cavity was dried, packed with iodoform gauze, as usual, and the wound partially closed with silkworm gut. The temperature on the second day was 100.4°, and normal thereafter. By the twelfth day the patient was able to come to the office for dressings. On the twenty-first day the mastoid wound was sufficiently healed to discard the bandage and use a black patch, to retain the gauze dressing. The patient was then doing her household work. The ear discharge had ceased some time before. The perforation in the drum membrane had healed. The inflammation of the middle ear had subsided and the hearing about restored (watch 2 inches, whisper and speech normal at 20 feet). During the next 3 weeks the writer saw the patient every 3 or 4 days, to change the dressing behind the ear. The wound healed rapidly and cleanly. Her condition remained apparently normal up to December 7th, six weeks after operation, when she complained of a sick headache. No special significance was attached to this. The headache persisted, and as the pain was referred to the right frontal region, a nasal examination was made for possible suppuration in this sinus; but nothing was found. A change in the patient's disposition developed, but was only recalled after more positive signs of cerebral trouble showed up. That is, the patient became quiet, seemed rather depressed, and on leaving my office, after receiving a prescription for the "sick headache," acted as if something of a personal nature was causing uneasiness. This was remarked at the time, and was attributed to family troubles.

By reason of an illness, I did not see the patient for 3 or 4 days, during which time she was treated for the sick headache by a confre, who reported on December 13th that she had suffered a good deal from frontal headache, and seemed to him to be growing dull. There had not been any elevation of the pulse and temperature, and, on the preceding night, there was noticed a sub-normal condition of both, with marked drowsiness; when aroused she would answer questions rationally, but would at once fall asleep.

When seen December 13th, the patient was in a semi-stupor; answered questions rationally and slowly when aroused, and at once relapsed into a stupor, from which she was aroused only by shaking her. While talking she would yawn listlessly; was weak and uncomplaining; said the headache had decreased, but still had pain in and over the eyes, worse on the right side; and no pain in the mastoid region. Her friends said she had vomited 3 or 4 times the past day or two, suddenly and without complaining of sickness; also had talked a little irrationally. A careful inquiry failed to elicit a history of similar attacks, or of hysteria, or of drug habits.

The examination notes made at the time are as follows: Temperature 98.6°, pulse 60. Mastoid wound practically healed; no tenderness on or over the mastoid; doubtful tenderness over the frontal sinus; no paralysis or disturbances of sensation or reflexes; no anoxia; tongue coated, and breath foul; urine passed voluntarily (examined later and found normal); left ear, normal; right ear, normal; pupils equal and respond to light normally; sight

\*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.

apparently good, but ophthalmoscopic examination of the right eye (by Dr. Babcock) showed marked papillitis; the disk was swollen and fuzzy, veins tortuous, margin of disk obscured.

The next morning, after the patient was taken to the County Hospital, she seemed somewhat brighter, but was still drowsy, yawned often, answered questions rather mechanically, by yes or no, and asked no questions. Urine and stools passed normally, but only when awakened and told to do so. Temperature 98.2°, pulse ranging from 54 to 60.

After a consultation (Drs. Babcock and Barber), operation was deferred on account of the apparent improvement. Within 48 hours the stupor had gradually increased without any change in the general condition, and immediate operation was decided on. She could still be aroused to take nourishment, void urine, or answer questions. The necessity for an operation was explained, and acquiesced in by her rather mechanically, but without evident comprehension. Before operation a careful examination was made by Dr. H. G. Brainerd, for his class in nervous diseases. In addition to the signs and symptoms given above, he demonstrated marked Babinski in each foot, but no paralysis, nor sensory or other disturbances. He concurred in the diagnosis of a brain abscess.

A blood examination (made by Dr. D. J. Frick) showed hemoglobin 90%; red cells, 5,300,000; white cells, 10,000.

Operation, December 16th, under ether anesthesia, assisted by Dr. W. D. Babcock and the hospital staff. The mastoid wound was opened and the firm scar tissue, with which it had filled, was removed down to the hard bony table covering the sinus, and to the inner table of the skull above the antrum. To further expose the middle cranial fossa, the skin incision was carried forward above the ear, the posterior fibers of the temporal muscle cut through and the ear laid well forward on the face. Around the small area of the dura, uncovered at the former operation over the antrum, the bony table of the middle fossa was removed to the extent of about 1 inch (2 cm.) in diameter. The dura appeared normal, except for the usual thickening where uncovered previously; there was no injection and no adhesions to the upper surface of the petrous bone; no pus or fistulous tracks on lifting the brain from the bone. The pulsation of the brain was normal. The temporo-sphenoidal lobe was then explored by a large aspirating needle. The needle was pushed directly upward and a little forward to the extent of about  $\frac{1}{4}$  inch ( $1\frac{1}{2}$  cm.) into the lobe above the antrum, when a feeling of entering a cavity was distinctly felt; a syringe full of greenish yellow odorless pus was drawn off (5 cc. by measurement). The needle was withdrawn, a dural flap made with a knife, and turned upward; and a long, narrow-bladed, sharp-pointed knife inserted through the apparently healthy brain tissue into the abscess cavity. By gentle lateral pressure with the flat of the knife, a little pus escaped. A Kelly's urethral endoscope (No. 18 French) was then inserted into the abscess cavity, which seemed to have a fairly firm capsule, and a little more pus and flakes were washed out by gentle irrigation with sterilized water. The cavity was dried and a wick of sterilized gauze inserted. The depth of the bottom of the cavity was over 1 inch (3 cm.). The mastoid wound was dressed with Iodoform gauze and an outside dressing applied.

The operation required 45 minutes. The patient reacted well. A hot rectal enema, heat to the body and 15 drops of epinephrin by hypodermic injection were given largely as precautionary measures against collapse.

A smear of the pus, examined by Dr. Frick, showed diplococci, and a few streptococci in long chains. A culture of the pus made by Dr. Stanley Black, of the University of Southern California, showed pneumococci.

On December 17th, the day following the operation, a marked change was apparent in the patient's condition. She had had a good night, was perfectly conscious; had awakened, surprised at her surroundings, asked how she got to the hospital, where her child was, and said she wished some friends notified that she had become ill again. She had no clear recollection of coming to the hospital, did not remember our visits or consultation there, or the demonstration of Dr. Brainerd before his class. Her last recollection was of the examination made of her eyes at her home; and she had a hazy remembrance of being carried somewhere.

On December 18th, a rubber drainage tube was substituted for the gauze wick, for better drainage, as a few drops of pus came out on removing the gauze. Three or 4 days later a cigarette drain was used instead of the tube. No irrigation was used after 2 or 3 days.

On December 29th, Dr. Brainerd again went over the patient and found nothing abnormal, except that the Babinski signs were still present. The papillitis had somewhat subsided, but a fuzzy disk remained.

On January 2d the drain was entirely removed, as the abscess cavity had remained free of pus, and had almost closed up. A small wick of gauze was used to keep the dural opening from closing for a few days.

On January 12th the patient was allowed to sit up. Her general condition was normal, and the mastoid wound had remained clean, and filled in rapidly.

January 18th the patient was allowed to return to her home.

By January 26th, 6 weeks after evacuating the brain abscess, the mastoid wound had again about healed, having filled in gradually with firm scar tissue. The convalescence had been absolutely uneventful. She had re-

mained free of pain, was doing light household duties, and was anxious to begin her work. A fuzzy disk persisted, although her sight was good. The recovery seemed at this time to be perfect. Two days later there was a sudden return of the sick headache and vomiting. The old pain, referred to the frontal region, had returned, and was increased on percussing over the right ear. The pulse was slow, 45 to 60; there was no drowsiness or other signs of cerebral involvement. She was at once removed to the hospital. Calomel, salts and an ice cap to the head gave no relief. Again, all other causes for the sick headache were excluded, as far as possible, by careful examination. After two days' observation reoperation was determined on, in view of the past history of the case, although stupor had not reappeared.

The mastoid cavity was cleaned out of scar tissue down to the dura above the antrum. The dura was bulging; pulsation was good; no pus was found between the dura and the temporal bone. An exploratory needle was pushed into the temporo-sphenoidal lobe in the same direction as before. Firm scar-like resistance, evidently that of a capsule, was met with at a depth of over 1 inch (3 cm.), the needle was then felt to enter a cavity, whereupon some thick pus escaped into the syringe. The cavity was opened with a long flat-bladed knife, and as before, fluid pus escaped; altogether a teaspoonful. The external opening was enlarged, the cavity gently irrigated, a cigarette drain inserted, and the wound loosely packed with Iodoform gauze.

No improvement followed this operation. It was believed at the time that the abscess cavity was the same previously opened; that it had not completely cicatrized when the external opening was allowed to close, and that some partially attenuated micro-organisms had been left, which in the course of 5 or 6 weeks produced sufficient pus to cause pressure symptoms. There was scanty discharge from the cavity. At each dressing by the use of the endoscope, the interior of the cavity was carefully inspected, but no fistulous tracts were found. The endoscopic picture of the cavity was that of a grayish membrane due to purulent secretion that bathed its walls. On wiping away this secretion a reddish membrane was seen, not unlike that of the urethra when chronically inflamed. The dull, frontal headache and slow pulse persisted, and drowsiness became more noticeable.

Another search (the third operation) under ether anesthesia, was again made 4 days later (February 4th). And this time the main abscess cavity was found and opened with the knife at the depth of about 2 inches ( $4\frac{1}{2}$  cm.), over  $2\frac{1}{2}$  teaspoonsfuls of greenish-yellow pus escaped rapidly, evidently from considerable pressure. A large external opening was made, sufficient to insert the little finger. The cavity seemed to be the size of an English walnut, and was well encapsulated. Some purulent detritus was washed out by gentle irrigation and gentle scraping with the finger. The larger size endoscope (No. 28 French) could be inserted to a depth of 3 inches (6 cm.) before reaching the inner wall of the cavity. A small cerebral hernia, the result of the previous operation, was trimmed off and the abscess cavity loosely packed with Iodoform gauze.

For several days after this operation there was temporary improvement in the general condition; the headache decreased; she was less drowsy and perfectly rational. Several small pockets of pus were found and opened. The endoscope proved of great value in locating these side pockets, as well as in cleaning and packing the cavity. The discharge grew less, and the abscess cavity seemed to be cleaning up. However, the general condition again became worse; stupor gradually increasing to coma, developed, and death resulted  $3\frac{1}{2}$  weeks later.

Autopsy findings. On removing the skull-cap there was found on the right side of the superior longitudinal fissure, on the upper surface of the frontal lobe, a large sub-dural collection of coffee-colored fluid, about 50 cc. ( $1\frac{1}{2}$  oz.) in amount. This abscess or cyst was circumscribed, and corresponded to the surface of the superior frontal convolution. When its bleb-like covering was removed and the fluid drained off, the surface of the convolution to the extent of 6 cm. (about 3 inches) in diameter was seen to be covered by a fibrino-purulent, slightly hemorrhagic exudate. The underlying brain tissue was slightly lemon-colored on the surface, but not softened or apparently diseased.

The dura around the opening made in the temporal bone was tightly adherent. A hernia, about the size of a hickory nut, projected through this opening, and through this led the tract to the abscess cavity within. A hemorrhagic exudate in the pia mater, followed the course of the ascending frontal artery towards but not quite to the subdural cyst described above. Elsewhere the brain cortex was normal.

Horizontal sections through the right side of the cerebrum showed a normal condition, down to the depth of 5 cm., when a bright lemon tinge was noticed. A deeper section reached the abscess cavity. The abscess cavity was free of fluid pus. Its walls were covered with reddish brown granulations. Its size was that of a pigeon's egg, and occupied a large part of the posterior portion of the temporo-sphenoidal lobe. The abscess cavity extended to within  $\frac{1}{2}$  inch (1 cm.) of the posterior horn of the lateral ventricle. The intervening brain tissue appeared to be normal. Two small abscesses, the size of a pea, were found, in the anterior portion of the temporo-sphenoidal lobe, in front of and below the main cavity, with which there was no fistulous connection.

The ventricles, left hemisphere and cerebellum were normal. Death resulted, apparently, from the sub-dural collection of pus and extravasated blood on the upper surface of the brain. The infection, it is believed, spread to this point through the lymphatics along the course of the sulci.

**Remarks.** Politzer states (p. 594) that only one-fourth of the cases of brain abscess of otitic origin are due to acute otitis media; according to Jansen, one-sixth, and according to Grunert, only one-tenth. Bacon (p. 357) reported a case of temporo-sphenoidal abscess that followed acute otitis media of only 8 weeks' duration. Allen has recently reported (*American Medicine*, January 7, 1905) a case of cerebral abscess, operated on at the Massachusetts Eye and Ear Infirmary, that also followed an acute suppurative otitis media. Jansen reported a case of cerebral abscess, found 5 weeks after the appearance of an acute suppurative otitis media, in which a fully developed abscess capsule was demonstrated, 10 days after the first symptoms of the formation of an abscess.

Köbel reported (see Politzer, p. 590) a case of acute purulent otitis with mastoid abscess, and with symptoms of cerebral abscess, in which autopsy showed empyema of both frontal sinuses, necrosis of the right frontal and an abscess in the adjacent lobe. These cases are cited to show that brain abscesses from acute suppurative otitis, while occurring less often than from a chronic otitis, are nevertheless not so rare; further, that the possibility of an abscess arising from a co-existent empyema of an accessory sinus of the nose should be borne in mind.

**Diagnostic symptoms.** Politzer states that "local symptoms in the cases of brain abscess do not often occur." The indications for operation in our case were slow pulse, sub-normal temperature, vomiting, increasing stupor and choked disc, following aural suppuration.

In the beginning, opium poisoning, uremic poisoning, hysterical disturbances and syphilis were excluded after careful examination and a few days' observation.

Optic neuritis is said to occur only in a small percentage of the cases, so that too much significance should not be attached to a failure to find this change on examining the eyes.

**Seat of the abscess.** "In 100 cases observed by Körner, the seat of the abscess was in the temporal lobe in 62%, in the cerebellum 31%, and both of these parts simultaneously in 6%" (Politzer). In our case the temporo-sphenoidal lobe was first explored, and fortunately, the abscess quickly found. In the event of failure to find the abscess here it was the intention to open the cerebellum in the location advised by Politzer and Jansen, namely, behind the antrum, between the lateral sinus and the posterior semi-circular canal. This method of exploring the cerebellum is considered preferable to trephining 2 inches behind the external bony meatus, because the great majority of cerebellar abscesses, Politzer states, are situated in the anterior and medial parts of the cerebellum, and are more easily reached from the antrum, from which a fistulous tract may possibly be found leading inward and backward. In opening an abscess it is worth while calling attention to the failure at times noted by other observers, in using the syringe and the value of using a sharp knife. Kelly's urethral endoscope served very well in this case in lieu of Whiting's encephaloscope. Cicatrization of a brain abscess cavity takes place, according to Politzer, in from 3 to 6 weeks. After 3 weeks, in our case, the cavity was allowed to close, as there had been no pus from it in 2 weeks.

**Results.** Politzer states "that brain abscesses end, almost without exception, in death if an operation is not performed." He believes that the published cases of brain abscesses that are said to have discharged externally were extra dural abscesses. The same authority states "a fatal issue is caused by either meningitis, after rupture of the abscess on the surface of

the brain, or by rupture and discharge of the abscess into the ventricles of the brain, or (less often) by encephalitis, or by complication of sinus thrombosis."

In our case, death was evidently due to the subdural abscess found at autopsy, which was quite distant from the primary abscess and on the upper surface of the brain.

#### DISCUSSION.

Cullen F. Welty, San Francisco. I sincerely compliment Dr. Hastings on his excellent report of the interesting case. The differential diagnosis of cerebral complications is considered the most difficult in the whole of surgery. At other times it is so easy that one with limited experience will not be able to make a mistake. Choked disc is present in 50% of cerebral complications; when present it assists you very much with your diagnosis.

The subjective and objective symptoms present in this case lead one to suspect cerebral abscess at once. One thing must be borne in mind—that when you have choked disc, the condition has existed some time prior to its manifestation. Providing a diagnosis has been established with the means at your disposal, and you can reasonably exclude meningitis, an immediate operation is indicated. By further delay you subject your patient to more serious complications that cannot be relieved by surgical interference. To my mind, several days elapsed in which there were clear indications for operation.

Another very important characteristic in this case is the persistence of the changes in the eye. This was a danger signal, and with the first appearance of any other symptom, or an exaggeration of the eye symptom, a second operation should have been done at once. From the literature at my disposal, I am led to believe that as the pressure symptom is relieved, the appearances in the eye disappear. I should be glad to hear from an eye man on this particular.

A very good point for the surgeon to bear in mind is that patients with meningitis die, while those having brain abscess have a good chance for life as long as there is breath. A basilar meningitis may produce choked disc; so may a sinus thrombosis; but you must in all reason look to your former field of operation or somewhere in the immediate proximity for the cause. When a surgeon diagnoses a brain abscess and demonstrates it by operation, he is well pleased with his work, and does not look for another. I remember seeing such a case; the second abscess was not diagnosed at all, and the patient died. I have seen 12 complicated cases with a mortality of about 50%. Lumbar puncture will materially aid in clearing up a diagnosis in difficult cases. When the fluid is turbid, meningitis is present, and it is said an operation is useless. I have seen one patient recover that had turbid fluid; I believe there are some 12 on record. It does not follow that you may not have a meningitis with a clear fluid; but you may have a clear indication for operation, and in some instances have brilliant results.

#### THE HOPES, DISAPPOINTMENTS AND SUCCESSES OF THE STATE BOARD OF HEALTH.\*

By N. K. FOSTER, M. D., Sacramento, Secretary.

THE State Board of Health of California was organized in the early seventies, and was the third in the United States. Since then the basic idea of the necessity for such a board has materially changed in conformity with the progress of sanitary science. The idea at that time was that the board should be advisory, and it was given certain duties, but no powers.

It must communicate with local health boards, but it was optional with them to answer or not. It must "take cognizance of the interests of health and life among the citizens generally," but when it came to

\*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.

enforcing proper measures to protect their life and health it was powerless to act. It must make sanitary investigation as to the causes of disease and epidemics, but having found a cause, it had no means of eradicating it. It must devise a scheme for collecting vital statistics, but the scheme had no power of law. It must diffuse information, but the means for so doing was not provided. It was evidently thought that a request or suggestion from such a board would be accepted and acted upon, and that the state would get a return for the \$4,000.00 thus expended. How little they understood the disposition of people in regard to sanitary affairs is appreciated by anyone who has had occasion to try to institute any reform in these matters. This lack of authority to enforce needed regulations made the board not only advisory but practically useless, for public officials are only human, and it takes but a few rebuffs to cause them to settle back in the harness and not try to pull the load up impossible steeps. The want of efficacy in the past has been more the fault of the system than of the officials.

Recognizing the want of proper information, the prejudices and selfishness of humanity, and the necessity for someone with ample authority to act in the protection of life and health, those states recently organizing boards of health have vested them with, in some cases, almost autocratic power. The board is not only given permission to gather vital statistics and draw the necessary deductions therefrom, but it was made compulsory upon it to do so. It was made its duty to investigate causes of epidemics, and when found it had power to eradicate them. Water, ice and sewerage, all so intimately associated with public health, were placed under its supervision. Nuisances dangerous to health could be abated without the slow process at present in vogue here. It was made an active factor in the state, and has proven, in every instance, of immense advantage to the people.

When the California State Board of Health took office April 1, 1903, it was imbued with these recent ideas of the duties and requirements of such an office. Being all new members, we were not fully conversant with the total emptiness of the position. We had perhaps misjudged our predecessors, and thought that we would reform the office and accomplish much, and we sought a high place from which to view our field of labors. We saw a state 300 miles long by 200 miles wide, with high mountains, broad plains and low valleys. Industry was everywhere, immense orchards and vineyards produced all kinds of fruit. Vegetables, fresh from the field, could be had each day of the year. Flocks and herds grazed through foothills and mountains. Thousands of streams of sparkling water came down from the mountains for the thriving cities and towns which were everywhere growing up. A climate unsurpassed, where suffering from extremes of heat or cold was unknown, and where all natural conditions tended to robust health and long life. Surely this must be a healthful state. A more careful survey showed our mistake, and the bright view took a darkened hue, and instead of perfect health, we saw sickness and death everywhere throughout the state. We saw the sparkling water from the mountains carrying down the myriads of typhoid and other germs from campers and residents along the banks. We saw consumptives swarming to our state for its pure air and glorious climate, infecting our people because of their want of knowledge and the proper means of care. We saw the little ones of our state fed upon milk drawn from tuberculous cows, and filled with all kinds of filth from stable and milker. We saw children sick with infectious diseases attending school and taught by teachers in perhaps the same condition. Everywhere death and disease walked hand in hand, and laughed at the puny defense made against their inroads. We saw in some of the cities and towns earnest and effective sanitary work, but being surrounded by country with no organized health departments, they

were being constantly invaded from without, and their efforts were in vain. We saw in our principal city a slight foothold of the dreaded plague, and as a consequence of a dispute regarding its diagnosis the state of California standing in the shadow of a quarantine by the eastern states, and the State Board of Health discredited.

We stood aghast at what we saw, and earnestly desiring to remedy the defects, sought our office to organize for the work. Alas, we found none. The great state of California had a Board of Health but no office room for it, not even a chair or desk. To the request to our predecessors for the property of the board we were given a few thousand copies of old reports, a few dozen reports from other states, and an unused ledger. By the kindness of a state official we were given permission to use one of his rooms, and, borrowing a desk and chairs, we began our work of trying to make the California State Board of Health a living factor in the growth and prosperity of the state.

A short review of the work of the board might be of interest. An examination of our laws showed us how faulty they were, but it must be 2 years at least before they could be amended, and meantime we must prove to the people not only the need of new legislation, but that it would be properly enforced if enacted. We naturally turned to the physicians for aid and advice, and although many looked with incredulity upon our ambitions and hopes, as a rule we received encouragement and help, and to their loyal support we owe and give our heartfelt thanks.

The danger of quarantine on account of plague was our first serious task. In January a conference had been held in Washington, at which resolutions had been offered which would have virtually quarantined the state, but action was deferred on it until June, thus giving the state an opportunity to demonstrate its willingness to cope with the situation. It devolved upon the state board to prevent this dire calamity, and we adjourned to meet next day in San Francisco, where a thorough organization was completed whereby the national, state and city health departments would continue harmonious work for one year, under a plan of operations which was carefully drawn up and signed. On June 3d, 2 of the members of the board visited Washington and frankly admitted to the "Plague Conference" which met on that date, that plague existed, told what we were doing to eradicate it, and asked their advice and aid, promising that every case should be reported in the monthly reports of the board. This gained for us their confidence, and the danger of quarantine was past; and at the conference one year after, they freely expressed their faith in our honesty and ability to handle the trouble, and now, after 14 months without a case, we feel confident that the disease is stamped out, and I am sure you will pardon us if we feel a little proud of our work.

Recognizing the want of organization and co-operation, we early conceived the idea of a state sanitary organization, where we could gather the health officers from all over the state and discuss questions of interest and arrange to work in harmony. This organization is now on a working basis, and has just held its fourth semi-annual meeting. To make it a thorough success, legislation is needed making it a duty of each sanitary officer to attend these meetings, the district he represents to pay needed expenses, and we hope that at the next session of the legislature such a law can be passed. It is as necessary to have trained health officers and organization to fight disease, which we always have with us, as a trained militia to fight a possible foreign foe. In no other way could municipalities and counties invest a small sum of money where it would yield such good returns. The board has taken an active interest in the health and sanitary conditions of the different parts of the state, and has always promptly answered calls for help by personal attention, and most of the counties

have been visited at the request of some officer or inhabitant. Causes of epidemics have been traced and aid given in removing them. All the state institutions have been visited, and better plumbing and disposition of sewage has been insisted upon, and in some cases secured.

The state law has for many years required the report of deaths, births and marriages to the county recorders, who quarterly must report them to the State Board of Health. We found in the attic of the capitol numerous rolls of these reports, a few recorders having carefully complied with the law. These reports we collected and preserved as carefully as possible, and notified all recorders of their duty, and that we expected of them the reports regularly. Many responded that they did not receive the reports from the physicians, but some have regularly sent them. These we have carefully indexed, so that in a moment's time any record can be found; and although the reports are imperfect, it is at least a beginning.

The work which has taken the most time and thought, and which we feel sure will be of lasting value to the state, is the series of laws drawn largely by the board and successfully conducted through the legislature. For drafting and conducting to a successful issue these laws we owe much to our attorney, Hon. W. I. Foley. A report on legislation will, I understand, be made to the society, but a brief review here will not be out of place. A complete system of registration of vital statistics is provided. The state is divided into registration districts as follows: Each city and incorporated town, and each county outside cities and towns is a primary district, with a registrar for each. In cities with freeholders' charters the health officer, in incorporated towns the clerk, and for the outside country the county recorder is the registrar. In case of death the undertaker is required to fill the certificate of death from information obtained from relatives or friends. He then takes it to the physician, who fills and signs his part, then to the registrar, who exchanges it for a permit for burial. Two copies of the certificate are made, one to be forwarded to the State Registrar of Vital Statistics, the other to be kept in the local office. Births are also to be reported to the health officer in cities with freeholders' charters, and county recorders elsewhere. Marriages are all reported to county recorders. Uniform blanks are to be supplied by the county supervisors from forms furnished by the State Registrar.

It is a misdemeanor to violate any sanitary rule of the State Board of Health made to prevent the pollution of ice or water intended for public consumption, or any rule or regulation respecting quarantine and disinfection. Power is given the board to prescribe and enforce regulations for the embalming, burial, cremation, disinterment or transportation of the dead. It is given power to abate public nuisances, and general power of examination, quarantine and disinfection. It may prepare or purchase antitoxin, vaccine and other improved lymphs. It is given sanitary control of all state buildings and the approvement of all plans for new buildings in so far as they affect the sanitary condition.

Another bill attempts to complete an organization reaching to every part of the state by using the present organization in cities and towns, and providing for a county health department for the territory outside. All contagious diseases to be reported to the health officer, and he to quarantine and disinfect, making monthly reports to the state office. To increase his enthusiasm for the work, his pay depends upon a notice from the state board that he had made the necessary reports. This will not insure perfect work, but will at least keep them in monthly correspondence with headquarters. Another bill creates a bacteriological laboratory at the State University at Berkeley, under the direction of the board. This is an important measure, and can and will be made of great advantage to the state. It is our intention to be prepared to examine pathological specimens for

health officers, and in case of contagious diseases to give results by telegraph or telephone if so requested. Another bill was introduced, not by our request, placing upon us the enforcement of the pure food laws. This was defeated, probably because of the appropriation.

It will be seen that our laws are changed materially and much added labor put upon the board. To do this we are given a bacteriologist and statistician, not all the help we needed, but enough so that we can do some effective work. We recognize that our efforts have results in a far less degree of success than we had hoped to attain, but this will only spur us to greater efforts in the future. The laws recently passed will permit of better results, but much depends upon the physicians of the state. In the matter of vital statistics this is eminently true, and we urge upon the doctors of all schools and beliefs to do their full duty in reporting births and deaths. This will require a small sacrifice of time on their part, with no hope of fee or reward except the consciousness of a duty well done and the gratitude of the state. We know the laws are far from perfect, and 2 years' trial may bring out unforeseen flaws. If so, we can remedy them then. Our hopes are that by the end of the term of the present board we shall see every birth and death recorded as it occurs, a complete and systematized health department operating through every part of the state, infectious and contagious diseases so promptly and thoroughly dealt with that epidemics will be impossible, the health departments of state, county and municipalities recognized as the most important branch of government, and California taking the rank which belongs to her by her many natural advantages as the most healthful state in the union. This can be done only by hard, earnest, honest, unselfish work—work such as only physicians trained to self-sacrifice will do; but the goal is worth the effort.

#### SPASTIC PARAPLEGIA.\*

By A. M. HENDERSON, M. D., Sacramento.

**S**PASTIC paraplegia, due to a derangement of the nervous system, is characterized by motor paresis of the lower extremities and increase of the tendon reflexes. These symptoms may be present in varying degrees of severity, and may be the only manifestation of the disease or may represent but a small part of the general disability. The anatomical lesion of spastic paralysis is not so easily localized as is demonstrated by the difficulties which Erb, Charcot and their followers have experienced in establishing the fact that such a disability may be dependent on a lesion of the spinal cord independent of the central nervous system.

Spastic paraplegia most frequently results from a cerebral lesion, which may be of intra-uterine origin, the result of arrested development, injury or disease of the mother, or may be caused at birth by the rupture of a blood vessel from prolonged labor, or by pressure of forceps, or may be acquired subsequent to birth, the result of injury, hemorrhage, embolism, thrombus or of any infectious disease. The cases of intra-uterine origin or those developed at birth are generally accompanied by severe mental impairment, frequently idiocy, and such of these infants as survive the first few years of life are quite likely to be of the most extreme type. The cases of acquired cerebral paralysis are less likely to be so severe in character. A large percentage of this class occurs during the first 3 years of life.

The etiology of the cases of spastic spinal paraplegia such as described by Erb and Charcot has not been definitely settled, but has been generally attributed to overwork, psychical shock, trauma, syphilis and heredity. The anatomical lesion has been well established to be a degeneration of the lateral tracts, most marked in and largely limited to the

\*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.

pyramidal tracts. Spastic spinal paraplegia may develop at any period of life.

Dr. W. G. Spiller of Philadelphia has made a most interesting report of the occurrence of 14 cases of spastic spinal paraplegia in one family. The motor paresis of the lower extremities is present in varying degrees of severity, but it is the increase of the tendon reflexes, the ankle clonus and patella reflexes that particularly characterizes the motion of one suffering from spastic paraplegia. Active motion is greatly interfered with by spasmodic contraction of the muscles. The effect of the reflex spasms may lead one to suppose that the paresis is greater than it really is. Walking is rendered difficult both by the paresis and the spastic rigidity of the legs. The contraction of the muscles of the calves causes plantar flexion of the feet and a tendency to walk on the toes, which is overcome only by the weight of the body; the feet "stick to the floor." The contraction of the adductor muscles causes the knees to hold together as a brace, or move one about the other in walking. In advanced cases an effort to move the legs may cause violent contractions of the muscles and extreme adduction of the legs. This adduction may be so extreme as to cause one leg to be thrown in front of the other in walking. The reflex muscular action opposes any effort to make passive motion of the legs, and separation of the legs is opposed by the action of the powerful adductors. The distortion caused by these spastic contractions tends to become fixed by the adaptive changes of the tissues. The muscles become rigid in the effort to overcome the spasms, the contraction of the muscles becomes permanent and the lengthening of the weaker opposing muscles increases. Atrophy of the muscles takes place from disuse rather than from degeneration of the nutritive centers. The bony tissues may also share in the deformities.

Medicine has accomplished practically nothing in the treatment of spastic paralysis, and when we consider the nervous lesions resulting in the paralysis we can hope for little from medical treatment. The great progress in abdominal surgery has so involved the attention of modern surgeons that the surgical treatment of the paralyses of children has not been given the consideration which the importance of the subject merits. The very character of the work, the length of time and the attention to detail required for the accomplishment of satisfactory results demands an amount of patience and perseverance possessed by few. It is not uncommon to see on the streets children with extreme deformity which could be greatly benefited by treatment, but which have quite likely received little encouragement from the physician. Most of the cases, with the exception of the idiot, the microcephalic and deplegic of extreme degree can be greatly improved by proper treatment.

Tenotomy lessens the frequency as well as the severity of the spasms of the muscles. Whitman argues that by elongation of the tendon the response to the exaggerated motor impulses is lessened and an opportunity for more effective control is afforded. Lorenz attributes the effect to shortening of the muscular portion of the tenotomized muscles so that their range of action is diminished. Tenotomy also makes it possible to overcome the deformity, and by relieving the tension on the opposing group of muscles gives them an opportunity to rest and recover power. Tenotomy should be performed even in the mild cases.

In performing tenotomy the question arises as to the selection of the open or the subcutaneous operation. The subcutaneous operation offers less exposure to infection, promises a more speedy recovery with less scar, and also avoids any concern for sutures. The open operation, although being more likely to infection, gives the operator opportunity to examine the tendon and to avoid injury to the nerves and vessels lying close to it. In the operation on such muscles as the adductors it is possible with the

open operation to excise a portion of the muscle and to observe just what is necessary to be done. Some question has arisen as to the use of the blunt tenotome, the sharp-pointed tenotome having been used to make the skin incision, and to open the way along side of the tendon, the blunt tenotome to be used in making the section of the tendon, so insuring against making an unnecessary cut of the skin on the opposite side. The use of the blunt tenotome will require more time, and is hardly so brilliant as the use of the sharp tenotome alone, but it is safer, and it may be as well to use it in the cutting of the tendons, such as the outer ham-string, which lies in close proximity to the external peroneal nerve.

The patient having been prepared, the adductors are first taken care of. For this operation it is more desirable to have the patient lying on the back. It will be necessary to cut the adductor longus, adductor brevis and gracilis. It may be necessary to cut the adductor magnus and the pectineus if either interferes with the complete abduction of the femur. If the open operation is followed, it may be well to excise a portion (about three-fourths of an inch) of the muscle. Having completed the section of the adductors, it would be well to turn the patient onto the abdomen and take up the tendo-Achilles. This tendon should be cut about one inch above its insertion, as this is its narrowest point. In cutting the tendo-Achilles one must be mindful to cut all of the fibers of the tendon, as neglect to do so may result in failure of operation.

In cutting the tendons of the ham-string muscles the preferable sight of operation is on a level with the most prominent part of the condyles of the femur. The peroneal nerve lies just behind and along the inner border of the biceps, and care must be taken not to sever the nerve. The patient must be placed in a splint or plaster of Paris cast, so adjusted as to keep the extremities abducted and the legs extended, and the feet dorso-flexed. This position should be maintained forcibly for 3 months. On removing the splints from the extremities, the feet should be tied to the sides of the bed at night, so as to maintain abduction. After 3 to 6 months, effort to walk should be encouraged. Various exercises should be adopted to overcome any tendency to contraction. Massage of the muscles may assist in overcoming the atrophy, and passive motion should be carried out, paying especial attention to the abduction, extension and dorsal flexion of the feet. I shall report the following case:

**Miss D. B., age 23.** Family history: Parents living and well; two brothers died of diphtheria. All of the family well and strong mentally and physically.

**Previous History:** Patient was a full term child, membranes ruptured two weeks previous to birth; mother was in heavy labor 5 or 6 hours; no forceps; the child was thought to be dead, but was resuscitated after two hours. Weight 7 pounds. Baby grew well, and walked at the age of 12 or 13 months. Perfectly well until 3 years and 6 months old; at this time she was struck in the back by a moving railroad train; there were no marks on the body, excepting 3 bruises, each about the size of a quarter of a dollar, over the spinal column. The child was unconscious for 10 to 12 hours, and suffered a total paralysis of the lower extremities. For 4 or 5 months she had no control of the bowels or bladder; they then became normal. At no time were the upper extremities affected. At the age of 4 years and 6 months the patient again began to creep; 6 months later began to get on her feet. She walked with spastic gait, could not stand any length of time, as the limbs would swell. At the age of 9 years the patient entered school; finished the grammar school at 17 years of age.

**Present Condition:** Abduction of the thighs very limited, the legs can be extended only by using considerable force, ankle clonus and patella reflexes greatly exaggerated. The slightest irritation starts violent spasmodic contractions. Patient cannot straighten limbs in bed, and complains of a dragging pain in the abdomen. When sitting on a chair the legs frequently commence to move involuntarily, and can be stopped only by standing. Patient has typical spastic gait, knees hold together, feet "stick to the floor," walks on the ball of the foot, legs are flexed on the thighs, and the thighs are flexed on the body.

Patient advised to consult Drs. Huntington and Sherman of San Francisco. Multiple tenotomy advised; operation performed January 20, 1904. I severed the ad-

ductors, the inner and outer hamstrings, and the tendo-Achilles. Plaster of Paris cast was applied, placing legs in extreme adduction, extending legs, and holding feet in dorsal flexion. After 6 weeks plaster cast was removed, and 2 weeks later patient began to move about, using crutches.

Patient's height has been increased about 2 inches, muscular spasms have been greatly relieved, muscles of the legs have increased in development, and patient is able to walk very much better than previous to the operation. One year after first operation it became necessary to sever the biceps tendon of the right leg. The tendon of the semi-membranous is now drawing slightly, and I expect it will be necessary to sever it again.

#### DISCUSSION.

**Dr. Elbert Wing, Los Angeles.** The society is under obligation to Dr. Henderson for an admirable paper, and for directing attention so forcibly to such an important class of cases. These cases are of especial interest, because the diagnosis is not always easily made, and they are of great importance because of the disastrous results of neglect and improper treatment.

The diagnosis in this case is perhaps not so difficult as the paper implies. All cases of spastic paralysis of the lower limbs belong in one of the following classes: 1. Cerebral hemi-, or paraplegia. 2. Amyotrophic lateral sclerosis. 3. Hereditary spastic spinal paralysis. 4. Primary spastic spinal paralysis or primary lateral sclerosis. 5. Spastic spinal paralysis secondary to myelitis.

After a prolonged labor, in which instruments were not used, Dr. Henderson's patient was born cyanosed, and resuscitated with difficulty, but had no convulsions or paralysis, and was a normal child until injured when 3 years old. When 3 years old she was struck by the step of a moving car, became at once unconscious, and remained so about 10 or 12 hours. Motor paralysis of the lower limbs alone—the face and upper limbs were unaffected—and paralysis of the sphincters of the bladder and bowel followed. Subsequently voluntary control of the bladder and bowel was regained. In 6 months the patient could sit upon a chair, and in a year could get upon her feet. Following this period the spastic condition in the lower limbs gradually increased until she was so very greatly benefited by Dr. Henderson's operation and subsequent treatment.

Cases of cerebral palsies occur within the first 5 years of life, and almost without exception are accompanied by convulsions, defective mental development and epilepsy. In this case there were protracted labor and cyanosis, most common associations of Little's disease, but the usual subsequent conditions were lacking.

Amyotrophic lateral sclerosis is a disease of adult life, and one in which spastic conditions, motor weakness and muscular atrophy develop slowly, and usually together. Hereditary spastic spinal paralysis develops very slowly at or after the fifth year of life, the spastic conditions precede the motor weakness and greatly predominate, and runs in families. Primary spastic spinal paralysis is a disease of adult life, develops very slowly, and the spastic conditions greatly predominate over the motor weakness. If muscular atrophy is present at all, it is merely that of disuse.

This analysis assigns Dr. Henderson's case to the fifth category. It was clearly secondary to a transverse dorsal myelitis. The unconsciousness at the time of the accident suggests the possibility of associated cerebral hemorrhage, but the fact that the motor paralysis did not involve speech or upper extremities, rules that out, and the subsequent history of the case is typical of spinal and not cerebral paralysis.

In any case of transverse myelitis above the lumbar enlargement, with recovery, varying degrees of loss of voluntary motor power, myotatic irritability or spastic conditions and muscular atrophy will result. This is because many of the cells and fibers in the cord which at first lose their power to act, subsequently regain it. If destruction of the cells of the

anterior horns predominates, atrophy, with motor weakness, will predominate. If destruction of the fibers of the crossed pyramidal tract is relatively greatest, spastic conditions will predominate. Normal muscular tone depends upon muscle impulses which descend from the brain by way of the pyramidal tract. Increased myotatic irritability is due to (1) loss of the regular descending muscle (inhibitory) impulses, or to (2) irritation of pyramidal fibers, or to both.

**Treatment.** Years ago Gowers suggested that improvement in cases of cerebral spastic paraplegia of childhood occurs: (1) Not through recovery of damaged structures, but to (2) functional reeducation of parts supplied by nerve cells or fibers only partly damaged, and (3) compensation of parts whose nerve supply has not suffered any permanent injury.

A very short time after the subsidence of the myelitis in such cases as this one under discussion, only general and tonic effects can be secured by the administration of drugs, and the only results in the way of substantial and permanent improvement possible are secured by functional rest of the overacting muscles, the flexor groups, and later reeducation of those functionally incapacitated through stretching, the extensor groups. In these cases the action of the flexors upon the extensors is analogous to that of weights used for counter-extension in cases of fractures, viz.: a relaxation which amounts almost to functional paralysis. It is exactly such results as this which Dr. Henderson sought and secured by the methods described in his paper. The paper is of somewhat unusual value because it directs attention to a class of cases often neglected because of incomplete diagnosis and a mistaken idea that they are practically hopeless, and because it illustrates how much may be done for them, and how to do it.

#### FIBRO-MYOMA OF THE UTERUS, FIBRO-MYOMA OF THE BLADDER WITH CALCIFICATION AND OSSIFICATION. PREGNANCY, MISCARRIAGE, SEPSIS, OPERATION FOR RELIEF; SECOND OPERATION AFTER TWO YEARS; RECOVERY.

By W. S. THORNE, M. D., San Francisco.

**Mrs. S.** Age 32, music teacher, married, and was first seen in consultation. The patient was a healthy and well nourished woman, who gave a history of regular but profuse menstruation for a year or more. She had missed one period, and she believed herself pregnant. The uterus was the seat of a fibroid growth, very hard and of moderate size, still fairly movable. Beneath the public arch and apparently attached to the bladder wall was a dense tumor, oblong in shape, and closely adherent. The broad ligament on the right side was much shortened by the extension between its folds of a dense fibroid growth. Pregnancy, therefore, was deemed undesirable, and I advised the medical attendant to evacuate the uterus by forced dilatation and curettage. Three months after my first visit I was again called, to find the following history:

Electricity had been applied as a substitute for curetting, without avail for several weeks, and the patient was then dismissed with the assurance that pregnancy did not exist. She subsequently fell into the hands of an irregular practitioner, who gave her massage and electricity. The final result was a miscarriage at 5 months. Four days subsequently the patient had a severe chill, followed by profuse perspiration and great depression. I found the patient the fifth day after the miscarriage profoundly septic. The daily rise of temperature, 106°; the pulse small, rapid and irregular; the chills, in which she became cyanotic, lasting from 30 to 50 minutes. I removed by curettage some decomposing fragments of placenta, and thoroughly cleansed the uterine cavity. The treatment thereafter consisted of normal salt transfusions every 6 hours, strychnia, iron, quinine and caffeine, and later the antistreptococcus serum, with marked relief as to temperature, respiration and abatement of the chills for several days, when the temperature again rose to 106°, with alarming concomitant symptoms. I then removed her to the Waldech Hospital, determined to open the abdomen and do a hysterectomy, if practicable, even at so apparently hopeless a time. The operation undertaken at this critical juncture revealed a dense irregular fibromyoma of the uterine body, and a number of small subperitoneal growths, one of which was attached to the uterus by a slender pedicle, was necrotic, and was re-

moved. An oblong tumor of stony hardness was found attached to the pubic arch and forming a part of the bladder wall. A few ounces of a turbid fluid was found in the peritoneal cavity. The condition of the patient was clearly too critical to admit of the prolonged manipulation necessary to remove the uterus, and feeling that I had accomplished some advantage by the removal of a necrotic growth, I washed out the cavity with hot normal salt solution and closed the abdomen.

Convalescence from this time was slow, but uneventful, and she was able to return to her home a month after the operation. A year from this time the patient's general health was perfect, her weight having increased 20 pounds, but she complained of increasing weight and pain over the left side after unusual exercise and at the menstrual periods, which were normal save as to frequency. The uterus was slowly enlarging, and at the end of the second year I sent her to the hospital and removed the uterus and the bladder tumor. This hard growth was firmly attached beneath the pubic arch and formed a part of the anterior bladder wall. Its removal involved an opening in the bladder of 2 or 3 inches. The patient made a rapid recovery, and left the hospital 3 weeks from the date of the operation. She has gained much in weight, is in perfect health, and is actively engaged in her professional work at this time.

The following is the report of an examination of the bladder tumor by Professor Ophüls of the Lane Hospital:

Calculated muscular tumor size of large hen's egg, situated between bladder and symphysis firmly attached to wall of bladder. The tumor consists of some involuntary muscle, but mostly of dense fibrous tissue. Large areas of the tumor are necrotic, and show irregular calcification. In one place one of the calcified areas has been transformed into bone tissue. One finds typical spiculae of bone with star-shaped bone cells; between them there is tissue of the construction of fatty bone-marrow.

Diagnosis: Fibro-myoma with calcification and ossification.

As the entoderm and mesoderm enter into the formation of the bladder, nearly all varieties of tumors have been found taking origin from its walls. The benign mature connective tissue tumors, fibromata, myomata and lipomata are very rare, and the different observers tell us that but few well-marked specimens have been recorded. I have thus far failed to find any record of a bladder tumor similar to the one here presented. In an interview recently had with Dr. Howard Kelly of the Johns Hopkins University, he informed me that he had never seen a tumor of the kind, and he was not aware of such in the literature of bladder tumors.

## ADENOID FROM THE STANDPOINT OF THE PARENT AND THE GENERAL PRACTITIONER.\*

By ROBERT L. DOIG, M. D., San Diego.

**W**HEN our friend Wycherly makes Sir Simon say, "Let me tell you, madam, familiarity breeds contempt," he voices a human experience that makes his phrase immortal.

When we drop the more restricted sense of contempt and substitute the synonyms, slight, neglect, disregard, it covers our experience in every phase of life. Those of us who have lived 10 years in California scarcely see the orange blossoms unless we have a visitor from less favored climes; we seldom think of the beauties of the flora, of the sea or of our semi-tropical flowers and fruits—they are all "a matter of course." Familiarity leads us to treat with neglect, disregard, the beauties and joys of life and also the ills that have become "an old story." Familiarity breeds neglect, disregard in things medical as well.

We, the physicians, expect the American people to have catarrhal affections; and we, the fathers and mothers, say, "I have always had catarrh, and I suppose the children will also." Professor Quinlan says: "Nasal obstruction, however produced, is of such unusual occurrence and so serious in its consequences that it merits careful consideration." Nothing could be more true than the last phrase, nor more misleading than the first. If not, why does the so-called "nasal voice" or "twang" make us the laughing stock of the nations?

I once had the pleasure of spending two days and a night in a jury room because one of my fellow jurors could not believe that a man could be insane who showed intelligence on any subject. If every case of adenoids developed in a week and caused absolute nasal obstruction there would be no neglected cases.

If every man who takes a drink were a drunkard, there would be no saloons. It is the evil of slow, insidious growth that becomes "an old story."

Let us paraphrase Dr. Quinlan's statement: Nasal obstruction, either complete or partial, is so common and so serious in its consequences that it merits careful consideration. Broadly speaking, hypertrophied pharyngeal tonsil is both the father and the mother of nasal obstruction.

Dr. E. A. Dial, in a very excellent paper read before the Santa Barbara County Medical Society,<sup>1</sup> says: "The physician who limits his practice to the treatment of the diseases of any special organ, is prone to become too enthusiastic on the importance of the pathological conditions of the parts he sees, treats, hears and reads about. This is true of the specialist who regards a woman's generative organs the center of her solar system, or the defective eye the cause of all headaches, or the stricture of large caliber the focus of all nervous troubles in the male. Yet no man has ever exaggerated the important role that adenoids play in the causation of diseases."

Personally I am a general practitioner. I am not even in the habit of performing the operation for the removal of the hypertrophied pharyngeal tonsil, but as an anesthetist I have watched the work of several other men, and so have seen a considerable number of cases. As I note the development of these children afterward; see the brightening eye, the more erect carriage, the alertness and general look of well being that comes in the months that follow, to those who have been relieved of this trouble; and, on the other hand, the vacant face, the open mouth, the gradually protruding teeth, the contracted chest, the listlessness at play, the dullness in school of those who go unrelieved, I am convinced that Dr. Dial is right, "No man has ever exaggerated the important role that adenoids play in the causation of diseases."

What, then, is this "bête noir"? An hypertrophy of normal tissues, in the pharyngeal vault, of whose etiology we are ignorant; whose existence and role and proper method of treatment was first demonstrated by Hans Wilhelm Meyer some 35 years ago. Unfortunately the hypertrophy in most cases gradually disappears after puberty. I say this is "unfortunate" advisedly, for it leads certain timid practitioners (or are they jealous of the specialist?) to advise against operation. When adenoids disappear at the approach of manhood or womanhood, the harm is done. Some of the dire results can be averted or removed by the skillful rhinologist and the patient orthodontologist, but nature's fair face has been so marred that never again can she be restored to her pristine beauty.

While the disease is local, the effects are both local and general. Contrary to the history of other diseased organs, the most direful results are not to the tissue directly involved but to the surrounding organs and to the well being and growth of the whole body. Just how early in life this hypertrophy may appear is an unsettled question, some authorities claiming to have removed adenoid growth from new-born babies, and others denying their existence before two years of age. Probably the development of permanent hypertrophy is slow in the beginning, and while the symptoms may not become marked before the child is two or three years of age, perhaps the adenoid is of almost equal age. Dench says "a cold in the head, in a child under 12 years of age, is almost invariably dependent upon adenoids within the pharyngeal vault."

It is not the purpose of this paper to go into etiology, pathology, etc., but to define the attitude of parents and general practitioners, and give some further reasons why both should be educated to the importance of the subject, and incidentally some hints as to the points that will appeal to them (especially the parents). The attitude of the parents is simply one of ignorance and a more or less stolid acceptance of the, to them, inevitable.

\*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.

<sup>1</sup>CALIFORNIA STATE JOURNAL, March, 1905, page 90.

The average physician is ignorant, indifferent or timid. To take the last first: Many are timid about performing an operation which they have never done, and perhaps, if graduated 25 years ago, they have seldom seen done. When they have taken post-graduate work it has been in other lines. While they have read of adenoids, their supreme importance to the sufferer is not appreciated. They know that some children, we might say the children in some families, are subject to colds in the head; that gradually they become mouth breathers; that some of them are slightly deaf, others have repeated and very painful "gatherings in the head" (which usually means pus in the middle ear, but may mean pus in the antrum of Highmore or the ethmoidal cells); that many of these children are dull in school, and gradually assume a half-idiotic expression; that most of them have crooked teeth and many protruding teeth that the upper lip covers with difficulty or not at all. A little later, when they become ashamed of their condition, these young people use patent catarrh remedies or come to the family doctor, and he treats their catarrh with various douches and sprays and applications, but with indifferent success, because the nasal septum is crooked and the turbinates are not simply congested but changed in texture.

The family physician knows all this, but he does not appreciate that the removal of the adenoid growth in early life would have prevented these multiplying evils. Surely he does not, or he would fit himself to do the work or insist on its being done by someone else.

My dear doctor, were it not that I've been guilty of like offense, I should say that this young lady has a good case for damage against you. Look at her. (I have the very one in mind, or rather two or three.) She should have been beautiful. She has escaped some of the dangers to which you subjected her. Her ears were not affected, and she is not stupid. She is only flat-chested and delicate looking; her beautiful eyes save the face from being repulsive in spite of the hanging jaw, the pinched and undeveloped nose, the short and protuberant upper lip, the crooked and prominent teeth—crooked and protruding in spite of the many dollars paid to the best dentist available and the many days and hours of discomfort and pain that she has suffered at his hands.

And *you* were the family doctor. You often prescribed for her "slight colds," but, as you held her on your lap and talked to the mother, you did not tell that mother what these colds meant, nor to what they would lead. But perhaps it is not that you would hesitate to perform the operation should they come asking it, but you are afraid to seem to "drum up business." Possibly physicians are over-sensitive on this point. If this is your trouble, send them to someone else, but do *not* allow these children to be handicapped for life on account of your sensitiveness.

How should we appeal to the parents, before the trouble has existed so long as to leave indelible marks? Sometimes from the health point, sometimes from the point of looks. Unfortunately there is usually some neglected child of your mutual acquaintance to whom you can point as an example, and set them to watch the people with open mouth on the street. Occasionally the expense seems a bar. Why should so much be spent on a child, simply because it often has restless nights, sometimes sleeps with its mouth open, and is subject to colds in the head?

In talking a short time ago to a mother of very moderate means, and to whom thirty-five or fifty dollars looked a mint of money, I said, if on the one hand you could leave this boy five or ten thousand dollars, but as he is, and will be, physically, on the other hand, you can give him this operation and the development I can almost promise you he will have—but no money—I would choose for him the operation and the chance to make himself a man among men.

I have only hinted at the effect upon the lungs; on the oxidation processes, which are so essential to

mental and physical development—on the ear (Dench says more than half of all cases). All these things you can find if I have awakened a spark of interest. As to one of my statements: "That hypertrophied pharyngeal tonsil is both the father and mother of nasal obstruction," I will have to admit that there are other children of other parents. We do have broken noses, and occasionally a child born with nasal deformity; but this is the dominant cause.

The best exposition of this that I have ever heard was not by a doctor, but by a dentist, in a paper read by Ray D. Robinson, D. D. S., of Los Angeles, before the Southern California Dental Society. The paper was illustrated by stereopticon views and casts of mouths, and the program committee of this association could not do a more kindly thing for the people of California than to ask Dr. Robinson to repeat this paper before this association.

The best text-book article with which I am familiar is in "An American Text-Book of Diseases of Children."

We might arrange the whole matter axiomatically. Every subject of adenoids is, more or less, a mouth breather. Mouth breathing forces up the center of the hard palate. An unnaturally high arched palate necessarily produces a deviated septum. A deviated septum aggravates and produces congestion and hypertrophy of the turbinate bodies.

#### DISCUSSION.

**Dr. Fred Baker, San Diego.** I am extremely sorry that Dr. Doig's excellent paper was not read before the Section of Pediatrics, as was originally planned. I can testify that the dentists are waking up to the enormity of the offense of leaving adenoid cases without operation, and to the long chain of evils which this entails, culminating, as far as their work is concerned, in the high-arched palate and hopelessly distorted incisor teeth. Dr. Robinson's finely illustrated paper before the Southern California Dental Association is bearing such good fruit that I sincerely wish he might be induced to repeat it before the Section of Pediatrics at some future meeting of the State Medical Society. This and a few such papers as Dr. Doig's might thoroughly arouse our brothers, the general practitioners, to the disastrous results of neglected adenoids which are altogether too commonly in evidence, their responsibility for which Dr. Doig has drawn none too graphically.

**Dr. M. W. Frederick, San Francisco.** Dr. Doig has given us in his paper an excellent résumé of the subject of adenoids, but it seems to me that he has not kept to his text. What we want to have is not a presentation of the clinical picture, but suggestions as to the best means of calling the attention of parents and general practitioners to this important and far-reaching condition. Thanks to the continued efforts of the aurists at state and other meetings, the family physician has become aware of this condition and its sequelæ to such an extent that most of them send the little patients to the aurist for his much-needed relief, instead of advising the parents, as was the former custom, to let the children "outgrow it." Nevertheless, there are many general practitioners who are indifferent to or ignorant of this condition, and it is therefore to be regretted that papers such as the one Dr. Doig has just read us, should not be read before the general body of this meeting, instead of before a small section of men who are already familiar with the subject. I hope that at future meetings papers of general interest will be read where they can reach the majority of those attending, and that papers of strictly special value be reserved for the sections.

#### Examinations in Texas.

The next regular meeting of the Board of Medical Examiners for the state of Texas will be held in San Antonio, Texas, on October 17th, 18th and 19th.

## CASE OF ACUTE CHYLOUS MESENTERIC CYST.

By H. B. REYNOLDS, M. D., San Francisco.

Mr. H. P., 26 years old, good habits, carpenter by trade. Family history and previous history of no consequence. Four years ago was kicked by a horse with considerable force in the epigastrium.

Four weeks ago was seized at night with colic pains in the abdomen, general in distribution but worse about the umbilicus. The next day he was able to return to his work, though the pain still was present. The third day the pain was worse and he remained at home for several days. Was badly constipated; loss of appetite and some nausea. On returning to work at the end of one week his pain became more severe than at any previous time. He consulted a physician and was again confined to his room. At this time was first discovered a small mass in the right side. The pain continued moderate for 3 weeks, sometimes better and sometimes worse, but in spite of it he was able to continue his work. Continued to be constipated, lost weight, had colic pains and felt a dragging sense of weight as "though his stomach were dragging on his gullet." The mass had continued to grow steadily until the size of a baby's head and he presented himself to me in this condition.

**Examination:** Young man, poor in flesh of a somewhat sallow color. Mucous membranes pale. Tongue slightly coated. Heart and lungs negative. The abdomen was retracted except at the side of the tumor. The appendix region was slightly rigid and there was a distinct, though not excessive, tenderness at the classical appendix point. To the left of this spot and extending slightly to the left of the mid-line and upward to the level of the navel was a prominent tumor the size of a fetal head. It was slightly movable, both laterally and up and down. Was moderately sensitive to palpation and quite distinctly fluctuating though tense. Temperature 99.2°; pulse 80; leukocytes, 3,000. A diagnosis of appendicitis with abscess was made and operation advised and accepted.

When anesthetized for operation and the belly wall was relaxed, the mass was found to be much more freely movable in all directions but downward. This immediately suggested to us resemblance to a mesenteric cyst upon which we remarked. An incision through the right rectus after Kammerer's method was made and the appendix was found thickened, kinked sharply on itself and drawn up outside of the colon by a firm adhesion band. The organ was removed. The tumor was found to be a non-inflammatory tense cystic mass between the layers of the mesentery just below the transverse mesocolon. The enlarged arteries and veins of the mesentery coursed over its left surface on their way to the jejunum.

The right leaf of the mesentery was opened and the tumor successfully, though with difficulty, removed by dissection from the vessels. Uninterrupted recovery. For nearly 2 weeks there was an after-noon temperature of 99° to 100°. The presence of some glands at the base of the mesentery suggested a tubercular origin, but the tuberculin test was negative; and the temperature gradually subsided in 2 weeks.

The cyst was of moderately thin walls, about 1 to 2 mm., varying in different places. It contained about 20 ounces of fluid very closely suggestive of cod liver oil emulsion. On standing the fluid separated into a lower third of dark clear serum and an upper two-thirds of cream or fat emulsion identical with chyle. Unfortunately the cyst wall was not saved through an oversight, so no microscopical report can be given.

The history of the cyst with its contents strongly suggest its origin from the rupture of a chylous vessel into a previously existing congenital serous cyst.

A complete and most excellent article on the subject of Mesenteric Cysts with bibliography by Dr. C. N. Dowd of New York will be found in *Annals of Surgery*, October, 1900, p. 515.

## CHRONIC SUPPURATION OF THE MIDDLE EAR IN RELATION TO THE WHOLE NUMBER OF EAR AFFECTIONS, WITH SPECIAL REFERENCE TO THE OPERATIVE CASES.\*

By CULLEN F. WELTY, M. D., San Francisco.

CHRONIC suppuration of the middle ear is so important that I wish,

First, to establish the proportion that exists between this affection and the whole number of ear affections.

Second, to establish by systematic diagnosis, following the latest and most approved methods, the proportion of operative cases that exist in the whole

number of cases of chronic suppuration of the middle ear.

Third, to show you by statistics why some operators have a greater mortality than others.

Fourth, to demonstrate to you that nearly all these patients can be cured, and the hearing usually benefited.

Fifth, to demonstrate from material at my disposal that 10% or more of all victims of chronic suppuration of the middle ear die from cerebral complications if not operated upon.

### NEW YORK EYE AND EAR INFIRMARY.

Total cases, 9,033; chronic suppuration, 1,823; operations, 159.

This shows every fifth case to be chronic suppuration of the middle ear. Every eleventh patient operated upon.

In the absence of a reply to my request for exact statistics of mortality, I estimate it on the basis of other large ear hospitals doing similar work to be 16. The reason of this is that the hospital is not large enough to accommodate all their surgical cases, and they have to confine themselves to those patients with threatening symptoms.

### NEW YORK OPHTHALMIC AND AURAL INSTITUTE.

Total cases, 1,760; chronic suppuration, 312; operations, 26.

This shows every sixth case to be chronic suppuration of the middle ear. Every twelfth patient operated upon. Two deaths, or 1 in 13 operations, which is very good when we take into consideration the small proportion of operations in the whole number of cases.

### UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

Total cases, 638; chronic suppuration, 90; operations, 11.

This shows every seventh case to be chronic suppuration of the middle ear. Every eighth patient operated upon. Two abscesses of the brain and two sinus thromboses, so every 2% patient had a serious complication. Reasoning from a statistical standpoint, at least 2 died. Again you see the serious complications are great in proportion to the number of operations. Had these patients been operated upon earlier, this would not have happened. Every fifth patient died.

### EAR DEPARTMENT, UNIVERSITY OF HALLE, A. S.

Total cases, 3,335; chronic suppuration, 456; operations, 93.

This shows every seventh case to be chronic suppuration of the middle ear. Every fifth patient operated upon. Seven deaths, or every thirteenth patient. This is one of the most progressive ear hospitals that I have attended. From the number of cases at their disposal, I believe they do more work than any other with which I am familiar. Halle is the home of Schwartz, who was the first to operate for chronic suppuration of the middle ear, some 20 years ago. However, the operation has been considerably modified; at the same time the Halle Clinic has continued to be among the leaders in ear surgery. One would imagine in all these years that they would have made some impression on the whole number of cases, but it seems that the continual increase keeps the hospital of twenty-five beds filled. They have a population of 225,000 to draw ear patients from, and there are other clinics in Halle doing similar work.

### UNIVERSITY OF VIENNA.

My statistics are not absolutely correct in regard to this clinic, but I am satisfied that they are so nearly correct that it will not make any difference in the relative proportions.

Total cases, 12,000; chronic suppuration, 2,000; operations, 300.

This shows every sixth case to be chronic suppuration of the middle ear. Every seventh patient op-

\*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.

erated upon. Many serious complications and 30 deaths. The reason for this large proportion of serious complications and deaths is the fact that only the patients with threatening symptoms are subjected to operation, because the hospital is not large enough to accommodate the other class of patients. Some authors advocate this standard of indication for operation, while the most progressive men of the day establish different symptoms and indications for operation.

#### JANSSEN'S CLINIC, BERLIN.

Total cases, private and clinical, 5,993; chronic suppurations, not specified; radical operations, 113.

From the fact that Docent Jansen does so much sinus work, it is hard to determine accurately the relative proportion of chronic suppuration to the whole number of ear affections, and the relative proportion between chronic suppuration and operations. For this reason his report is not included in my statistics. No reference is made to the number of deaths, in his report.

#### MANHATTAN EYE AND EAR HOSPITAL.

(Report received too late to be included in statistics.)

Total cases, 4,850; chronic suppuration, 875; operations, 81.

Number of deaths not reported. You will notice from the figures that the relative proportion is not changed.

#### My own cases, private and clinical:

Total cases, 112; chronic suppuration, 34; operations, 9.

This shows every 3 1-3 case chronic suppuration of the middle ear. Every fourth patient operated upon. No serious complications and no deaths. Remaining for operation, 5 (in order of severity):

First—Destruction of attic wall, large masses of cholesteatoma. Hears acoumeter on contact; labyrinth intact.

Second—Caries discovered by use of the probe of the inner attic wall; occasional headache on this side.

Third—Cholesteatoma protruding from the attic.

Fourth—Caries and discharge of fifteen years' duration.

Fifth—Discharge from the ear for the last 6 years; has been under treatment 6 months. Refused to operate, 2; man 72 years old; chronic tuberculosis of the lung; much emaciated and weak; tubercular process of the ear; second, paralytic of many years' duration; will not live long.

Five patients refused operation (in order of severity):

First—Localized pain over one side of the head which had persisted for 3 weeks; meatus and attic full of cholesteatomatous masses; ear discharge for the past 20 years.

Second and third—Extensive destruction of the bony attic wall; masses of cholesteatoma; discharge for 4 years.

Fourth—Cholesteatoma of the attic; cannot demonstrate caries.

Fifth—Caries with discharge for the last 7 years.

None of these patients has a possible chance to recover. The nature of a cholesteatomatous growth is such that it increases in size continually. The only treatment that can be at all effective is to irrigate the attic and antrum with a mild antiseptic solution by the use of a canula in the hope of dislodging the mass piecemeal. Providing you have removed the entire mass, which is rather doubtful, you will have to repeat your procedure in a short time, and so continue for the balance of the life of the individual. Some few patients with caries may recover under careful treatment. The location of the denuded bone or fistula has a great deal of bearing on this. They should be watched and treated carefully for a definite length of time. All conditions being favorable, if they do not recover an operation should be advised.

Three of the patients would have died during the year had they not been operated upon (in order of severity):

First—Dura exposed the size of a large thumb-nail, fistula of the horizontal semicircular canal, facial nerve uncovered for one-third of an inch, thereby giving access to cerebral complications by 3 distinct routes; dizziness so marked at times that the patient would fall on the street.

Second—Cholesteatoma the size of a large hazelnut, filling the mastoid cells, uncovering the sinus, granulation tissue on the sinus wall, Bezold's abscess of the neck.

Third—Pus retention, localized headache increasing in severity during the last two years.

Three would have died within the next few years (in order of severity):

First—The whole of the mastoid cells filled with a carious, necrotic mass; duration of the discharge, 15 years; patient 21 years old.

Second—Cholesteatoma the size of a hazelnut in the antrum; fistula of the attic wall; child, 4½ years old.

Third—The entire attic and antrum filled with granulation tissue; a polypus protruding from the external meatus. Continual pain on this side of head.

Three may have continued to have discharge for the balance of their lives, providing the disease did not progress (in order of severity):

First—Tympanic membrane intact; fistula of the attic wall; at times this fistula was closed by granulation tissue, producing severe localized headache. The suppuration has existed for 15 years.

Second—Granulation tissue the size of a pea in the tip of the pneumatic mastoid; duration of discharge, 5 years.

Third—Caries of the inner attic wall; duration of discharge, 10 years.

#### TABULATED CASES ACCORDING TO GROUPS.

Case.	Age.	Cured.	Under Treatment.	Hearing.
1st	1	56	6 weeks	..... Improved
	2	34	13 weeks	..... Improved
	3	23	6 weeks	..... Unimproved
2nd	4	22	9 weeks	..... Unimproved
	5	4½	13 weeks	..... Improved
6	50	12 weeks	.....	Improved
3rd	7	25	9 weeks	..... Improved
	8	12	.....	8 months Made worse
	9	38	15 weeks	..... Made worse

Percentage of cured patients, 90.

Average duration of treatment for cured patients, 10 weeks.

Improved hearing, 5, or 55%; unimproved 2, or 22½%; made worse, 2, or 22½%.

One patient has been under treatment for 8 months. A short time since I found a small fistula that was covered by epidermis; this was opened, and I believe the patient will soon be entirely cured. The hearing was made worse. The reason for this is that there was an unusual amount of cicatricial tissue binding down the stapes.

In case nine the hearing was made worse, and the patient was under treatment 15 weeks before he was cured. This was a very complicated case, because the brain was found to be so low, and the wall of the sinus so encroached upon the posterior osseous canal, that the radical operation was impossible. So I performed the Stacke operation, chiseling from within outwards. The cavity was very small, and there was danger of the existence of undiscovered carious bone. The wound was closed by the Körner flap. The attic and antrum completely filled with organized connective tissue, which was afterwards covered by epidermis. This tissue extended into the tympanic cavity, binding down the stapes very firmly, and obliterating the tube as well.

Dench reports in the February number of the *Archives of Otology*, 100 radical operations; 73 cured,

21 not cured, 4 result not known, 2 deaths. The only comment to be made on this is that the mortality is so extremely low that one is led to believe that these must have been selected cases. The mortality in hospitals such as the New York Eye and Ear Infirmary and the Ear Hospital at Vienna is about 10%.

I have 34 ears with chronic suppuration, and in that number I find 21 demanding operation. Of course this is out of proportion to any of the others I have mentioned. I account for it in the following way:

First—The number of cases is not sufficiently large to draw satisfactory conclusions.

Second—So little of this work has been done in San Francisco that the percentage of operative cases is very large.

Third—Five of the patients came to me prepared for operation, as they had been under treatment varying from months to years.

In making a general summary, we find:

Whole number of cases, 26,878; chronic suppuration, 4,715; operations, 598.

Every 5 $\frac{1}{2}$  case, chronic suppuration of the middle ear; every eighth patient operated upon; 57 deaths, or 1 for every 10 $\frac{1}{2}$  patients operated upon.

The conclusions we must draw then are:

First—That every sixth case of ear disease is due to chronic suppuration of the middle ear.

Second—We find 4,715 cases of chronic suppuration, with 598 operations, or one in every eighth patient. The two large clinics that do not have sufficient room to accommodate all of their patients needing operation are included. If allowances are made for this condition, it will bring the proportion to something like every fourth or fifth patient.

Again, we must bear in mind that the work in America has not been carried on so energetically as in Europe; so in making my final conclusions I will say that perhaps every third or fourth patient can be considered an operative one.

Third—The reasons for the high rate of mortality I have spoken of before. It depends largely upon the class of patients operated upon.

Fourth—The table shows the relative proportion of cures, and the proportion in which the hearing was improved, unimproved or made worse.

Fifth—in my own series of cases, six patients would have died within the course of a few years. This is two-thirds of the whole number of operations. Estimating that the same relative proportion exists in the whole number of operations reported, it would mean that 400 of these patients would have died had they not been interfered with; in other words, 8.5% of the whole number of those with chronic suppuration of the middle ear.

We must make allowances for cases overlooked by the best; allowances for those that are not treated at all, and for those that are not correctly diagnosed. This in the aggregate will amount to between 12% and 15% of the whole number dying from cerebral complications. In establishing the percentage in my own series of cases, I find that it is 17 $\frac{1}{2}$ % of the whole number.

Case 1.—Female, age 56 years. When a child, had acute otitis on both sides, following scarlet fever. The ears continued to discharge until she was about 20 years of age. At this time she noticed that she did not hear perfectly, but she had no treatment. She has always been in good health until a year ago, when she consulted a physician about her nose. He removed polyps from both sides. Examining her ear later, he removed, as the patient described it, layer after layer of a whitish substance, from her ears. A few weeks after, the ears began to discharge, and have discharged up to the present time (November 11, 1904). She complains of dizziness for the past 2 months, to such a degree that sometimes she falls. She also complains of blurred vision at times, which soon passes off.

Weber, to the bad ear. Rinne, right ear positive. Bone and air conduction shortened. Rinne, left ear negative. Bone and ear conduction somewhat shortened. Schwabach, almost normal. Right ear, whisper 4 inches, acoumeter 4 inches. Left ear, does not hear whisper on contact. Acoumeter on contact only. Examination, right ear, drum membrane entirely destroyed. The entire attic wall destroyed by caries. A great deal of the posterior superior wall also destroyed by caries. The cholesteatoma protrud-

ing. On use of the sound the patient has pain referred to her tongue.

Left ear, drum membrane entirely destroyed; attic wall partially destroyed; cholesteatomatous masses in the attic. I cannot detect caries, but it is undoubtedly present. Middle meatus, both sides, full of polyps; an empyema of the ethmoid cells. November 14, 1904, radical operation. An extensive cholesteatoma filled the attic, the antrum and the mastoid cells. The whole of the posterior osseous and membranous canals were destroyed. The outer attic wall was destroyed. The dura was uncovered by caries the size of the thumb-nail. There was a fistula in the horizontal semicircular canal. The facial nerve was uncovered for about one-third of an inch. One day after the operation, the patient had a slight paresis. It passed away in the course of a few days.

January 10, 1905, hearing improved. Cured.

This is a very remarkable case, because of the three distinct routes by which brain complication might have been produced. I can say further that I have never seen a patient with a triple lesion recover, let alone be cured of the chronic discharge.

Case 2.—Male, age 34 years. June 21, 1904, had the ordinary diseases of childhood; denies venereal diseases; with the exception of influenza, which he had 3 years ago, he has been perfectly well, with his influenza came an acute suppuration of the middle ear. He was well of the influenza in 3 weeks. However, the discharge from the ear continued. He was treated for it for some time then, and has been treated for it at various intervals since, but it was not cured. He never had any symptoms traceable to mastoid disease. Three months ago, or in March, 1904, a swelling appeared in the side of the neck, which was opened and discharged a great deal of pus. The discharge was shortly reduced to a minimum. It was supposed to be a tubercular abscess, and the patient was advised to have it removed. He presented himself to the surgical department of the polyclinic with this history. It was noticed that he had some cotton in his ear, and he was asked what was wrong. He said he had had a discharge from the ear for a long time; he was referred to the ear department for an opinion. Upon cleansing the ear there was found a large perforation in the posterior superior quadrant of the membrana tympani; no granulation tissue nor polypi could be seen; by the use of the Siegle speculum pus was seen to come from the antrum, and it was fetid. Examination with the sound revealed denuded bone. On this, a diagnosis was made that an operation was indicated.

Weber, to the bad ear; Schwabach, lengthened; Rinne, right ear, positive; left ear, negative; right ear, whisper, on contact; left ear, whisper, 25 feet.

In regard to the swelling in the neck, it was probably associated with the mastoid known as Bezold's abscess. Operation performed in the usual way, closing with the Panse flap. The wound was left open. On opening the mastoid cells a large, infected cholesteatoma the size of a hickorynut presented; the bony sinus wall was completely destroyed and the sinus covered with granulations. A communication with the abscess in the neck was found, which proved to be a long pocket-like formation with an opening at its upper end. This part of the operation was done by Dr. Rykogel. He dissected out the infiltrated tissue and glands, curetted, and applied pure carbolic acid and alcohol and closed the wound. Healing, almost by primary union. The hammer and incus were not carious. The patient made an uninterrupted recovery in 13 weeks, which is a little better than the average for the open method of treatment. His hearing in the ear operated upon improved so that he could hear a whisper at 3 feet, which means good hearing for ordinary conversation. It will be seen from the pathological lesion found at operation that this patient would soon have had a serious cerebral complication.

Case 3.—Male, aged 23 years. July 2, 1904. When 6 years of age had scarlet fever. This was followed by acute otitis; the ears have discharged continually ever since. Otherwise he had had good health. Two years ago, had the ossicles removed from the right ear to cure this discharge. However, it was not successful. Added to the complication of chronic suppuration, he began to have periods when the ear would not discharge, accompanied by more or less headache on the same side. This has gradually increased in severity.

Weber, to the right ear. Schwabach, lengthened. Rinne, right ear, negative; bone conduction lengthened; air conduction shortened. Rinne, left ear, negative; bone conduction lengthened; air conduction shortened. Right ear, whisper on contact; watch on contact. Left ear, whisper on contact; watch on contact.

Right ear, entire destruction of drum membrane; part of the attic wall destroyed; cannot detect necrosed bone; pus very offensive, and coming from the antrum by the use of the Siegle speculum. Left ear, a large perforation in the posterior superior quadrant; part of the hammer destroyed; pus coming from the antrum. The right ear was operated upon by the Schwartz operation. A polyp was found which had acted like a valve, between the antrum and the attic. The attic and the mastoid cells were full of granulation tissue. Recovery in 6 weeks. Hearing unimproved.

Case 4.—Female, age 21 years. Had the ordinary diseases of childhood; acute otitis following scarlet fever at the age of 8 years. The discharge continued uninterruptedly for 2 years; adenoids were removed and some drops were used for the ear. The ear remained perfectly

dry for one year. Since that time it has discharged more or less.

Weber, to the good ear. Rinne, right ear, positive; slightly shortened bone conduction. Rinne, left ear, negative; considerably shortened bone conduction and very much shortened air conduction. Schwabach, somewhat shortened. Right ear, whisper 25 feet. Left ear, whisper on contact; acoumeter on contact. Caries of the attic wall with a fissure extending into the same. Some granulation tissue about it, which has a tendency to bleed on manipulation of the probe.

January 19, 1905, radical operation in the usual way, closing by the Körner flap. On removing the periosteum from the mastoid the bone showed a dark blue color; this was produced by the carious necrotic mass of the mastoid cells. The hammer and the incus were almost destroyed by caries. The wound has been dressed every second or third day. The patient complained so much of dizziness and headache, that she remained in the hospital 30 days. I attribute some of the headache, if not all, to a compound astigmatism, as it was relieved by the continuous use of her glasses. While in the recumbent position she was not dizzy. When she assumed an erect position she would become very dizzy, and at one time fell from her chair. I hardly know how to account for this dizziness; probably the stapes was partially or completely removed during the operation; it might be due to a fracture of the horizontal semicircular canal, or it might be from direct traumatism. Shortly after the operation she was reported by the nurse to be delirious; this happened two or three times. She is a highly sensitive, hysterical woman; I diagnosed the case as hysteria at the time. Her mental condition has improved gradually until the present time (March 1st) she is quite free from the aforesaid symptoms. She complained of headache, or soreness about the side of the head, but on percussion, no tenderness or soreness was elicited, nor did it aggravate the condition she complained of. When she began to walk, her gait was that of a person with a fractured pelvis. Eye background perfectly normal. Posterior wound healed by primary union March 27th, ear absolutely dry. Hearing unimproved.

Case 5.—Boy, 4½ years old, January 4, 1905. The father states that for the past 6 months the ear has discharged; does not remember that it ever discharged before. The discharge is very offensive. By examination, a polypus was found filling the entire meatus and protruding from it. This was cleansed and removed by a snare. However, I was not able to determine the origin of this polypus. A few days later the patient was anesthetized and the remainder of the polypus was curetted away and a more thorough examination made. I was able to demonstrate that the origin of the polypus was from a fistulous opening through the bony walls of the attic. There was considerable denuded bone that I could feel with the probe. On this I recommended operation. January 15th the operation was performed in the usual manner, closing with the Panse flap. On opening the attic a cholesteatoma the size of a hazelnut was found. The facial nerve was accidentally uncovered for a quarter of an inch; however, there was not the slightest suggestion of paralysis or palsy following this. The patient was up and about the ward in 6 days; on the seventh day he had a temperature of 104°; this diminished from day to day, lasting a week or 10 days. I can give no clear cause for this, with the exception that the parents gave the child sweets the day prior to his fever. March 10th, posterior wound entirely closed. April 10th, ear entirely dry; hearing very much improved.

In regard to the pathological lesion, I would say that the child evidently had had an acute otitis very early in life, which became chronic. There was such a slight discharge from this that it was not noticed by the parents until 6 months ago. Had this patient not been operated upon the ultimate result would have been deaf.

Case 6.—Female, age 50, January 1, 1905. Fifteen years ago had severe pain back of the ear, which lasted for several months. Has had more or less continuous pain ever since. Has been treated off and on for the last 14 years by a general practitioner. Complains of acute exacerbations of pain, limited to this side of the head. For 2 or 3 weeks has had headache and severe pains back of the ear. Chronic discharge from both ears.

Weber, in both ears. Schwabach, shortened. Rinne, right ear, negative; bone conduction shortened. Rinne, left ear, negative; bone conduction shortened, but not so much as in the right ear. Right ear, acoumeter, 3 inches; left ear, acoumeter, 1 foot. Have to speak in a very loud voice to make her hear at all. Right ear, drum membrane entirely destroyed; a mass of cholesteatoma protruding from the attic; a fissure in the anterior part of the attic wall. Left ear, a large polypus filling the entire meatus and protruding. The following day I removed the polypus; two days later the discharge was very offensive, and cholesteatomous masses were protruding from the attic; the posterior superior wall was bulging. January 5th, radical operation; closed with the Panse flap; cholesteatoma found in the attic; the antrum was full of granulation tissue. March 29th, ear perfectly dry; hearing improved. The other ear remains to be operated upon.

Case 7.—Male, age 25 years. When 11 years old had acute otitis of both ears. The left ear discharged for about 2 months; the right ear has discharged ever since the attack; he says he does not hear at all or very little from this ear. Complains of frequent pain, deep seated in character. Three years ago had a particularly severe attack of pain, which was followed by a copious discharge, and the pain was relieved.

Weber, in the bad ear. Schwabach, lengthened. Rinne,

right ear, negative; bone conduction lengthened. Rinne, left ear, positive; bone conduction normal. Right ear, acoumeter, 3 feet; whisper, 18 inches. Left ear, acoumeter, full distance; whisper 25 feet. The drum membrane of the affected ear was adherent to the inner wall. A fistulous opening in the walls of the attic; a fistulous opening into the antrum; granulations protruding from both. The discharge is always very offensive.

November 28, 1904, radical operation; closed by the Körner flap. The pathological conditions found at operation do not vary from those already described. This patient suffered from pus retention 3 years ago, according to symptoms given by the patient; such cases as these never get well of themselves, and are very likely to leave serious cerebral complications.

Case 8.—Boy, 10 years of age, August 16, 1904. Had scarlet fever when 3 years old, which was followed by acute otitis on both sides. He has had intermittent treatment extending over considerable length of time ever since. Otherwise he has had good health.

Weber, in both ears. Schwabach, probably slightly lengthened. Rinne, right ear, negative; whisper 10 feet. Rinne, left ear, negative; whisper 7 feet. Examination, right ear large perforation of the drum membrane in the anterior inferior quadrant. No denuded bone can be detected. By the use of the Siegle speculum pus comes from the eustachian tube. At a later examination the pus was seen to come from the attic. The discharge ceases for 2 or 3 days and then reappears. Left ear, the perforation of the drum membrane is in the posterior superior quadrant; considerable pus, not very offensive. By the use of the Siegle, pus comes from the antrum; denuded bone can be detected in this region; what could be seen of the attic wall was whitish in appearance.

August 18, 1904, operated in the usual way, closing by the Panse flap. The entire attic and antrum were covered with epidermis, which had grown from the external meatus replacing the mucous membrane, a pneumatic mastoid. In the bottom of this cavity were dark red granulations about the size of a large pea. This could not have resulted in a spontaneous cure, because the epithelium would have been cast off as soon as the granulations were reached, forming a cholesteatoma. He has been under treatment 8 months; about 4 weeks ago I discovered a small fistula that was covered by epidermis, which I think is the cause of the long delay in his recovery. I opened this fistula, and after a few days the ear was comparatively dry, with the exception of a slight oozing that takes place from a surface not covered by epithelium. I expect the ear to be perfectly dry in a week or two. The hearing in this case was made worse, due to an unusual amount of organized connective tissue over the stapes.

Case 9.—Male, aged 38 years, October 15, 1904. Nine years ago, had acute otitis, which continued to discharge for several months. It has discharged off and on during the entire 9 years. For the last 8 months he has had a continuous discharge, accompanied by more or less pain back of the ear. The discharge during this last period has been very offensive.

Weber, in both ears. Schwabach, lengthened. Rinne, right ear, positive. Rinne, left ear, positive. Right ear, whisper 25 feet. Left ear, whisper 12 feet. Examination, right ear, membrane intact; perfectly healthy. Left ear, a heart-shaped perforation of the whole of the inferior part of the membrane. By the use of the Siegle speculum, pus comes from the attic. By examination with the probe, caries is found in the inner attic wall.

November 10th, Stacke operation closed by the Körner flap. On taking away the first rim of bone, the dura was uncovered. This was because the brain encroached so much on the attic and antrum, leaving no room to proceed farther in this way. I then began the removal of the posterior osseous canal lower down, in hopes of entering this way; however, the second piece of bone I removed uncovered the sinus. There was only a small bony partition between the posterior membranous canal and the wall of the sinus, rendering it absolutely impossible to proceed with the radical operation. Therefore, the Stacke operation, which is especially adapted to such cases, was substituted, removing the outer wall of the attic and antrum from within outwards. The cavity presented the appearance of an inverted cone. On account of its diminutive size the after-treatment was not entirely satisfactory. The hearing was not improved because the antrum and attic and part of the tympanic cavity filled with organized connective tissue covered by epidermis. This tissue presses on the stapes so firmly as to impair his hearing. He hears a whisper 3 feet in the ear operated upon. Under treatment 15 weeks before the ear was absolutely dry.

#### DISCUSSION.

Dr. Barton J. Powell, Stockton. Dr. Welty has secured some valuable statistics, and they certainly compare most favorably with other authors of this country and Europe. The people are gradually being educated as to the seriousness of middle ear trouble. Every aurist has a number of suppurative otitis cases, which he feels need operation, and the patients in recent years are learning to demand a radical operation. It is to be hoped that Dr. Welty will continue to keep a careful record of these cases so that we can again have the pleasure of hearing from him on the subject.

## DEMONSTRATION OF AN INTERDENTAL SPLINT FOR FRACTURES OF THE LOWER JAW.\*

By RAYMOND RUSS, M. D., San Francisco.

THE necessity for a practical splint in lower jaw fractures, which would not interfere with the oral functions, and which at the same time would maintain reduction and immobilization of the fractured bone, has long been felt by all surgeons. The literature on the subject is voluminous, and a great many forms of apparatus have been suggested. Yet in spite of the attention which has been directed to this fracture in past years we find the surgeon today reverting to the most primitive methods in its treatment. Wiring of contiguous teeth, as advocated by Hippocrates, and the use of the chin splint, first recommended by Paré, are still largely practiced.

The wiring of teeth on opposite sides of the fracture is most unsatisfactory. The teeth soon loosen under the strain, allowing more or less play between the ends of the fractured bone. The chin splint, generally made of molded pasteboard, as first used by Huster, or of plaster-of-Paris, and held in place by a Barton bandage, is the dressing most generally employed at the present time. The inefficiency of such an apparatus is apparent. The fracture is properly reduced at the first visit, and a bandage applied tightly so as to keep the jaws firmly pressed together. The next day we find that the bandage has loosened to such an extent that the patient can articulate well, and has probably been able to open his mouth wide enough to feed himself with a spoon.

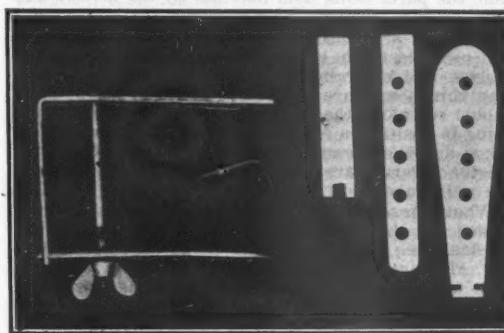
Fortunately the displacement in the majority of cases is not great, and the parts are held in fair apposition even by this faulty method. Marked deformity resulting from such treatment is, however, frequently seen. When the simple chin splint fails the surgeon generally adopts the doubtful procedure of wiring the ends of the fractured bone, rather than call upon a dentist to construct an interdental splint; the latter procedure is not always possible, nor is it sometimes advisable for the patient to go without proper treatment during the time required to make such an apparatus.

On examination of the different methods employed in the construction of interdental splints, we find that the most satisfactory results are obtained by those which combine both downward (interdental) with upward (chin) pressure. This mechanical principle is seen in the splints of Wales, Sudduth, Lonsdale, Bullock, Moriarty, Ackland and Matas. It is of the greatest importance that such a splint be as simple as possible. The era of cumbersome and elaborate forms of apparatus in the treatment of fractures, which reached its climax in the ridiculous appliances of Bardenheuer, has fortunately passed. There are few kinds of apparatus for fractures of the mandible that are practicable from a clinical standpoint. Many require a skilled dentist for their application, thus greatly limiting their field.

The points which I would emphasize, in regard to the splint to be presently described, are that it holds the fractured bone firmly and allows of free use of the lower jaw, thus preserving the oral functions. It does not so cover the teeth as to prevent free cleansing with antiseptic solutions. It can be easily made by any gunsmith or locksmith, and is thus accessible to every practitioner. It is comfortably worn by the patient, and, if properly adjusted, does not loosen easily. It can be readily applied to those recent cases in which it is impossible for the patient, without force, to open his jaws but a slight way, thus preventing the taking of impressions or the molding of a mouthpiece. It can be quickly removed, for purpose of inspection, and can be rapidly readjusted. Unfortunately, like other interdental splints, it cannot be used in all cases. Cases of fracture of the rami, or of the condyloid or coronoid processes, or severe comminuted fractures are outside its scope. Looking over my clinical records, however, I feel that

I could have employed it successfully in about 90% of my cases.

This splint, illustrations of which are here shown, is made of spring brass of 3-64 of an inch in thickness. It consists essentially of two clamps, the chin pieces of which are incorporated into a plaster-of-Paris dressing. Each clamp is made of two parts, a chin piece and a piece bent at right angles, making a long and short arm. The chin piece is 8 cm. long, somewhat wider at one end so that it may not slip from the dressing, and provided with a number of holes, that the plaster-of-Paris may obtain a firmer hold. The right-angled piece is 1 cm. in width, and the arms measure 7½ cm. and 5 cm. The ends of the short arm and the chin piece form a simple lock.



These two parts when locked form a clamp, which permits of adjustment by means of a round head brass machine screw 6 cm. in length, and carrying a winged nut. This fits into holes in the long arm and chin piece at 1½ cm. distance from the short arm. After the clamps have been made they should be heavily nickel plated. The making and plating of the clamps will require one day. The clamp has been found to be applicable to 35 out of 50 adult jaws. For

\*Read at the Thirty-fifth Annual Meeting of the State Society, Riverside, April, 1905.

the remaining cases a clamp with a short arm of 5½ cm. is required.

The splint is applied with the patient lying in the dorsal position upon the operating table. The face is cleanly shaven, any excoriations present are protected by zinc oxide ointment and gauze, and the fracture reduced. A thin layer of felt or several layers of sheet wadding are then neatly fitted over the jaw and under the chin, and a plaster-of-Paris bandage applied directly. The bandage is carefully folded, the operator rubbing the plaster well in as he proceeds. It should extend as far back on each side as the ramus, where the turns are held in close apposition by an assistant or by the patient himself. After sufficient layers have been applied to well cover the jaw and make a firm foundation, the clamps are placed in position, the parts being held together by the screws and nuts.

The long arms are applied directly over the molar and bicuspid teeth, extending as far back as the last molars, and emerging at the corners of the mouth. The chin pieces are pressed into the plaster. They should run along the body of the jaw. The apparatus being in position, a few more turns of the bandage are taken and the dressing completed by rubbing in dry plaster-of-Paris, care being taken that the chin pieces are well embedded in the plaster.

When the dressing has dried the clamps are unlocked and the cast removed and trimmed to the desired shape. The dressing is then reapplied to the jaw. The interdental portions of the splint, together with some dental compound, such as is ordinarily used by dentists in taking impressions, are thrown into hot water. When softened sufficiently, the dental compound is applied along the under surface of each interdental arm. These are then quickly placed upon the teeth, in the same positions which they occupied in the first application, and pressed down firmly, so that they rest upon an even bed, the dental compound filling up the holes which have been previously bored into the long arms. The parts are then locked together, the screws applied and the apparatus tightened by means of the winged nuts.

The application of the apparatus is not difficult. The splint furnishes a quick and ready method of treatment, and thus far has given excellent results. If properly made, uniform pressure will be exerted by the plaster-of-Paris cap, and no excoriations of the skin will result. By means of the action of the two parallel lines of force, each clamp holds its half of the mandible as in a vise, while spreading is prevented by the closely fitting plaster-of-Paris dressing. Firm pressure on the molar teeth, so necessary in the treatment and in the retention of the apparatus, is exerted.

I applied the splint to one patient in whom the contour of the lower teeth was extremely irregular. In such cases the apparatus, after a day or two, may loosen sufficiently to allow the long arms to slip from their positions. I find this difficulty can be overcome by leaving a number of tabs upon the long arms when they are cut from the brass sheeting. These can be turned down at right angles, and will thus make the position of the long arms perfectly secure.

In one case I had to deal with a large open fracture in which great mobility was present. This was situated just in front of the right second molar. This molar and three incisors were the only teeth present upon the lower jaw. In this case but one clamp was used, the chin piece of which was embedded in the plaster. A hole was made in the long arm, and in this an edge of the second molar was caught. This apparatus remained in place for three weeks without loosening, and I obtained a good result.

I have employed a number of mouth washes in these fractures, but prefer a solution of liquor cresolis compositus of from  $\frac{1}{2}$  to 1 per cent strength. This solution should be used every hour or two during the day, and should be supplemented by copious irrigations of the same. The teeth should be thoroughly cleansed at least once a day with a pledget of cotton.

## THE MISUSE OF ATROPINE IN EYE DISEASES.\*

By LOUIS C. DEANE, M. D., San Francisco.

THE last score of years has seen the advent of a number of new mydriatics, yet with all, the part which atropine plays in the realm of eye diseases has hardly, if ever, been attacked. It is not my motive here to disclaim the value of this wonderfully effective drug, but to curb to some extent its promiscuous use in the treatment of the eye. To show if possible where it might be used more judiciously, be supplanted by some other drug, or be dispensed with entirely.

It is with much interest that I have reviewed a number of our more recent text-books on the treatment of iritis and cyclitis. Without exception atropine has been spoken of as the remedy par excellence for these affections; this, of course, we all must admit. Is it not possible, though, that some damage might, or is likely to result from an unrestricted use of this drug?

In the very mildest case, where we are simply in doubt as to the exact condition of the iris, a drop of atropine solution will unquestionably dilate the pupil. We note that maximum dilation has been attained in less than an hour. To set at rest in our own minds the possibility of a congested iris, or mild iritis, we have paralyzed the accommodation for 10 days, and left the eye without protection against excessive amounts of light for this period. More judicious would have been the use of a drop of a solution of euphthalmine at this time, which, had we been in error in our judgment, would have allowed the pupil to return to its normal size in a few hours, with accommodation unaffected. We might term this a *test drop*; if it fail in its action within half an hour, we are justified in using a stronger mydriatic, as scopolamine, which is quite as powerful as atropine, but has the advantage of allowing the pupil to return to normal size within 3 days. If an iritis is present, this drug can be pressed and used throughout the treatment, it having some advantages in such cases over atropine. Besides its much shorter period of action, it is not irritating to the conjunctiva and skin, and as it is used in solutions from 10 to 20 times weaker, there is far less danger from a general absorption of the drug and toxic symptoms so commonly observed during the use of atropine.

In violent forms of iritis with synechia and other marked symptoms, atropine is the drug above all others that we must rely on; but, allow me to suggest a reversal of the general procedure of from weaker to stronger, and recommend that we discontinue the atropine as the case progresses favorably, and use very weak solutions of scopolamine, and later euphthalmine.

It has been the experience of all oculists, that it requires great judgment to determine when to discontinue the mydriatic. We are guided by the rapidity with which the pupil contracts, whether the inflammation has quite subsided or not. If it does not begin to contract sooner than 2 or 3 days, the violence of the inflammation has really expended itself. The reaction of the constricted blood vessels of the iris can well be supported by a more temporary mydriatic and the pupil readjusted as gradually as desired.

Iritis can hardly be considered, without taking into account cyclitis, as their relation to each other in inflammatory conditions is an old story; one or the other predominating but always associated. It is here that we have to be on our guard in the use of atropine. Tell me of an oculist whose best resources have not been taxed by a resistant case of irido-cyclitis with increased intra-ocular tension, and who has not used atropine with great discretion, and I will tell you of a man who, by his thoughtlessness, has destroyed an eye. I desire to state a case in point.

R. B., male, aged 36 years, slender, under-nourished individual, consulted me June 1, 1904. No history of rheuma-

\*Read before the San Francisco Society of Eye, Ear, Nose and Throat Surgeons, May, 1905.

tism or syphilis. The pupil of the right eye was widely dilated, slight periorbital and conjunctival injection, punctate deposit on posterior surface of the cornea; cornea slightly hazy; no pain or sensitiveness on pressure; tension + T 1; fundus normal except for a pulsating artery; pulse 120; tongue dry, and patient in a generally nervous and demoralized condition. He had been under treatment for 3 weeks for a so-called iritis by an oculist, who had been using atropine as usually prescribed in these cases. His eye presented a marked glaucoma with a dense deposit on the cornea, and symptoms of general atropine poisoning; suffice to say that I used no more atropine, and the pupil commenced to resume its normal shape in a few days. I dared not use any myotic, as pilocarpine, on account of a cyclitis and possible iritis that I knew was only concealed by the glaucoma, produced by atropine.

Then came a most trying period, for though the pupil was contracted, the eye still remained hard, the artery still pulsated, and he now developed a few posterior synechia. With a 1-10% solution of scopolamine, the adhesions were separated, and then its use temporarily discontinued. So for 2 months the iris was kept in constant motion by these transient mydriatics, never obtaining a maximum dilatation or contraction, and so the inflammation subsided. The pupil would dilate after the use of hot fomentations, and I favored their use, also, internally, yellow iodid of mercury, and later iunctions.

In November, 6 months after the first attack, he returned with a distinct cyclitis of the left eye, showing a deposit on posterior surface of cornea, periorbital injection, no pain, and pupil moderately active. I decided to use no mydriatic in this eye, unless I was forced to, but prescribed mercury as before, and hot fomentations. The cyclitis subsided within 4 weeks without having to resort to any local application. I believe that had atropine been judiciously used at the beginning of his first attack, or had it been supplanted by a weak scopolamine or euphthalmine solution, its violence would have been greatly lessened.

There is a large class of diseases of the eye involving the cornea, sclera, and conjunctiva where the iris may or may not participate in the process. I might mention as most prominent among them parenchymatosus keratitis, sclerosing keratitis, ulcers of the cornea, scleritis, certain forms of conjunctivitis, especially those that are apt to involve the cornea, etc. In all such cases our first duty is to note the condition of the iris and attempt its dilatation, but one rule must command itself:

*The weakest mydriatic that will obtain and maintain a moderate dilatation is the best.*

Atropine in the usual 1% strength is rarely called for and a solution of scopolamine of 1-10% to 1-20% should be used; one to two drops a day, in most cases, is sufficient. Why do these modified therapeutic measures commend themselves? First, they are in the vast majority of cases as effective; if not there is ample time to revert to the stronger solutions or atropine. This *graduated form of therapy* is particularly applicable to the eye, as we can observe here with great facility and accuracy the effect of drugs. Second, when I speak of 1-10 to 1-20% solutions, used once or twice a day, I am suggesting measures 10 to 20 times weaker, and resorted to less frequently than is usual, even granting that scopolamine is slightly more toxic than atropine. Third, the peculiar and irritating effect of atropine on the conjunctiva, often producing conjunctivitis, is of such frequent occurrence that in corneal troubles it greatly handicaps the application of the pressure bandage and the use of yellow oxide ointment or calomel, measures we mostly rely upon. Fourth, some corneal affections, where the eye is exceedingly sensitive to light, are aggravated by the use of a mydriatic, especially atropine; for while the disease often disappears in a few days the effect of the atropine remains for some time after.

For ophthalmoscopic examinations of the fundus, atropine is frequently used to dilate the pupil. Such a procedure is never justified and should be heartily condemned. Euphthalmine in strength of 2%, in a 2% solution of cocaine, makes an ideal mydriatic for such purposes, as a maximum dilatation of the pupil is obtained in half an hour, which passes off in 3 hours, the accommodation remaining unaffected.

In diseases of the fundus, such as optic neuritis, choroiditis, retinitis, and mydriatic should be used with some judgment. Where it is not absolutely indicated to control an associated inflammation of the iris, it is contra-indicated; because in such cases the

less light entering the eye the better. If we are in doubt, euphthalmine or a 1-10% solution of atropine may be used.

Following uncomplicated operations for cataract, atropine or any mydriatic is generally not indicated and only the evidence of pain should prompt one to remove the dressing during the first few days in the search for an inflammatory condition. Why do we shun atropine in such cases where its application might act as a safeguard? Aside from its local irritating properties it is not uncommonly followed by constitutional symptoms, notably dementia. Atropine especially in the old, is particularly prone to cause a secondary glaucoma, and, as was generally believed, the removal of the lens does not lessen the chances of such a complication.

In discussion for secondary cataract, the one real danger, and one which has turned many against it, is the fear of secondary glaucoma. A maximum dilatation of the pupil is necessary during the operation; if scopolamine is used and glaucoma follow it can be neutralized by eserine or pilocarpine.

After some years of heated discussion on the use of cycloplegics in determining the refraction of the eye, there have arisen advocates of 3 methods. Those who claim that sufficiently accurate results can be obtained without the use of a cycloplegic, and those, on the other hand, who believe in a prolonged and complete paralysis of accommodation as produced by atropine. The third are those who believe that a temporary paralysis of accommodation is sufficient, as when scopolamine or homatropine is used.

The first method must unquestionably be condemned for reasons too numerous to mention, and not germane to the subject. The last two (atropine versus a milder and more transient cycloplegic) are what confront us.

It is with some hesitation that I enter upon the subject. The weakness of all such discussion is that each has his method, and adheres to it more or less closely. Many advocates of homatropine have never used scopolamine, and seldom if ever atropine, for refraction; so opinions must vary as to detail. The value of atropine as a powerful cycloplegic is unquestioned, though I have failed to determine experimentally that the paralysis is any more profound than with scopolamine.

The duration of the paralysis of atropine is a strong and effective argument against it, the cycloplegic action lasting from 8 to 14 days, as compared with the 2 or 3 days of scopolamine. The increased toxic effects from atropine used repeatedly in 1% solution, and its greater liability to precipitate an attack of glaucoma, also favors the use of the more transient cycloplegic.

Much more could be said upon this subject of refraction, and the relative value of various cycloplegics and mydriatics, what aid they lend in obtaining practical results in correcting errors of refraction, also their deficiencies; but I do not desire here to enter into a discussion on this question.

#### THE NEW BIRTH CERTIFICATE BLANK; ITS IMPOSITION, NECESSITY AND CORRECTION; IT SHOULD BE “FRANKED” BY THE STATE.

By GEORGE E. ABBOTT, M. D., Pasadena.

R EGARDING the new birth certificate blank, allow me to quote the following comment:

“We have been using for reporting births a very convenient, satisfactory and efficient postal card, short and concise, with questions printed clearly on one side and the health officer's address printed on the other. All we had to do was to fill it out and drop it in the next letter box. This we were glad to do for vital statistics. In using the new blank we are obliged to fold the blank (the present one, by the way, is just too large for the envelope), furnish and

address an envelope, furnish a stamp—sometimes in pocket, often not, and if not, keep it in mind until mailed. If the parents cannot name the child on the spot, 'insult is added to injury,' and we must go through the same process in sending a 'Supplemental Report.'

"This is an absolute imposition on several thousand physicians, just for the sake of four or five cranks who happen to be interested in vital statistics. I say, 'Millions for defense, but not one cent for tribute.' Hours of practice for charity, but not one minute for imposition."

The sentiment quoted above will certainly find a ready encore from many in the profession, because of its just criticism. At the same time the writer feels that there are few men really interested in their profession who would refuse to accept the additional trouble and slight expense incurred when they see the increased accuracy of the new blanks.

The most aggravating part of the "imposition" is that it is entirely unnecessary, and can easily be avoided. Will it not be wise for those interested in vital statistics—and who should not be, at least indirectly—to obviate these objections, which can easily be done? There is no reason why, and no excuse for, the blank certificate not being printed in the form of an envelope folder, addressed to the local or state officer of vital statistics, and "franked."

The state is interested in these vital statistics more than any individual, and the state certainly ought to have the power to "frank" its own mail, at least as much as an individual senator or congressman.

It is, of course, absolutely necessary for the state to ask and accept the gratuitous service from the medical profession; but in order to secure a hearty coöperation and complete returns from them, every facility for returning the blanks should be offered those who give the service.

The use of the present blank is most certainly an imposition on the medical profession at large. The birth certificate blank should be printed in the form of an envelope folder, with adhesive edge and franked, and thus let the printing press in one hour save the medical practitioners all over the state an immense amount of time and annoyance. Will not those in authority do this for us?

#### REPORT OF A CASE OF ATYPICAL RHEUMATISM.\*

By WILLIAM C. VOORSANGER, M. D., San Francisco.

**G**IRL, 10 years of age, first came to me on May 16, 1905, at the Emanu-El Sisterhood Polyclinic, complaining of feeling ill generally, slight pain in stomach and constipation; she also stated that for the past 2 days a rash, which seemed to gain in intensity, had appeared on her body. Three weeks previous to this present illness the patient had had a slight attack of tonsilitis, lasting a few days. With this exception she had always been a remarkably healthy child, escaping even the usual diseases of childhood. Family history was particularly good, mother, father, 6 brothers and sisters all alive and well; no venereal or hereditary taints in the family history.

She was well nourished, rather well developed, tongue heavily coated, with free edges, pupils react normally, no disturbance in the course of the cerebral nerves, slight enlargement of the superficial cervical glands, no visible pulsations, face rather anxious, body, especially arms and legs, covered with an irregularly raised eruption, which in places shows signs of desquamation; temperature 102°, pulse 98, good tension, regular. Chest: Well developed, moves freely and equally upon respiration; lungs show no dullness to percussion and no abnormalities to auscultation. Heart: Borders not enlarged, tones pure, second sound over the aortic orifice slightly accentuated. Abdomen: Distended, somewhat painful upon pressure in epigastric region; dullness in left hypochondriac region. Liver and spleen not enlarged; reflexes, especially the patellar, slightly exaggerated.

The picture, presented upon initial examination, seems to be that of constipation, acute indigestion and urticaria, for which I treated the patient by giving her calomel gr.  $\frac{1}{4}$  ten tablets, followed by citrate of magnesia; a milk and broth diet with rest in bed were also ordered. Upon the following day the patient's rash seemed to be vanishing, the bowels had been evacuated several times, but the

temperature still persisted at 102°. The child appearing lethargic, and the symptoms beginning to point that way, I suspected typhoid fever, and arranged my treatment accordingly. The urine twice carefully examined showed nothing abnormal, barring a high acidity. This second diagnosis seemed borne out by the character of the stools, which were very yellow and almost pea-soupy in character. However, this diagnosis was made impossible by the patient's temperature on the subsequent morning (May 18th) dropping to normal, the rash becoming very indistinct, and the patient presumably feeling better, although still very lethargic. I assumed after all that my original diagnosis was correct, and told the mother I should not call again. Two days later I was hurriedly summoned, to find my little patient with a temperature of 103°, pulse 100, feeling very wretched, tongue heavily coated, and a rash, for the third time, pronounced, as before of a very irregular character, and what was most peculiar of all, redness and swelling of all the end joints and phalanges of the fingers and toes. The child stated that she had noticed nothing wrong about her hands and feet the night before, but upon awaking found the fingers and toes red, swollen and painful; in fact, the slightest pressure upon them seeming to cause her considerable agony. I carefully examined all the large joints of the body, the other joints of the hands and feet, fingers and toes, but could find no redness, swelling or pain upon pressure or motion. Assuming, nevertheless, that I had to deal with a case of arthritis rheumatica, I placed the patient upon aspirin gr. XL per diem or gr. V. every two hours, the hands and feet were swathed in cotton wadding and bandages; absolute rest and light diet ordered. Upon the third day, after this treatment (May 23d), the temperature was normal, the rash disappearing and the redness and swelling in the joints almost gone; 3 days after this (May 26th) all symptoms, including rash, had disappeared, and upon the tenth day, or 16th, after initial onset of rash, the child was discharged and allowed to go around with her playmates. Up to the present time she has remained perfectly well, with no return of her joint trouble.

Now, with what condition beginning so simply did we have to deal? The course of the disease and its ultimate ready response to aspirin leaves no doubt in my mind that it was a case of rheumatic fever beginning with a purpura rheumatica. The onset was extremely atypical, since a purpura seldom begins a rheumatism, occurring mostly during the progress of the disease. The character of the purpura itself was atypical, since a purpura or petechia rheumatica is most often regular, and not raised, just as any other purpura, all purpose nowadays being generally recognized as correlated hemorrhagic conditions. The eruption resembled more nearly an urticaria than any other skin lesion, and thirdly and most important the localization in the small joints of the hands and feet all of them swelling and reddening simultaneously, with absolutely no involvement of any large joints, is an extremely unusual happening. We know that rheumatism is common in children, shows at times peculiar types, but occurs mostly in the large joints, or, if the small ones are involved, they are seldom alone affected. Not only did this attack occur isolated in the small joints, but it involved 20 end joints simultaneously, the disappearance of the disease occurring in the same way as its appearance.

#### Linguistic Crimes.

From the editorial pages of recent issues of two medical journals, the following sentences are taken:

"The fact that Dr. Thayer's case recovered completely after 7 weeks only makes this possibility more proximate." It is edifying to know that Dr. Thayer's condition recovered, but one cannot but wonder whether Dr. Thayer was equally fortunate.

In a learned editorial on the Curability of Paresis, it is to be found the following: "It is, moreover, in the experience of many alienists that a case diagnosed with every apparent probability of correctness has occasionally turned out something else or has made an unexpected recovery." Certainly, if a "case" can make a recovery that fact would be most unexpected.

#### Wimer Suit Against the Board.

Some time ago a rejected candidate, W. W. Wimer, by means of mandamus proceedings, attempted to compel the board of examiners to issue him a diploma. The case came before Judge Hebbard, in San Francisco, and the court would not permit the board of examiners to introduce any evidence; Wimer's case was so trifling that the introduction of evidence by the board was, probably, considered a waste of time. It is to be regretted that Wimer attempted to prove his case by means of one of the examiners, Dr. J. B. Mitchell, a professor in the local eclectic school.

\*Presented at the June Meeting of the German Medical Society.

## COUNTY SOCIETIES.

### Alameda County Society.

The Alameda County Society held its regular monthly meeting on August 21st. No scientific papers were read, but the evening was spent in a discussion of plans for the purchase or construction of a permanent home for the society, a building which will be adapted to all its needs, both scientific and social, and which will belong to the society itself. The suggestion that the society proceed to acquire such property was enthusiastically received, a considerable sum was at once subscribed for the purpose, and it is assured that the society will within a few months be housed in its own building, thus taking a unique place among the societies of this coast.

Another matter of great interest and importance to the medical profession of this county was the adoption of amendments to the constitution whereby it is provided that all the business of the society shall be transacted by an executive board consisting of all the officers. This is in line with the methods of the A. M. A. and state societies, and it is hoped that it will effect an improvement in the character of the scientific work of the society by permitting time to be devoted to scientific and social purposes which was formerly squandered on useless discussions of business details.

T. C. McC.

### Orange County.

The Orange County Medical Association held its regular monthly meeting September 5th. After the usual routine of business, Dr. C. D. Ball read the paper of the evening, entitled, "Recent Lacerations of the Vagina and Perineum." It was a thoughtful, practical paper, one which interested every one present, as was evidenced by the animated discussion it brought forth. Dr. Ball emphasized the importance of securing coaptation of the muscular structures, and demonstrated the part they took in the formation of the pelvic floor. Some of the members advocated a delay of 24 hours before suturing the laceration, maintaining that the patient was then in better condition to have the work done; others were in favor of immediate repair, and argued with good reason that every hour the wound was left open exposed it to infection.

Dr. Wm. Freeman of Fullerton has promised the paper for October, and we are expecting an excellent program, as Dr. Freeman always writes a forceful, interesting paper.

H. S. GORDON, Secretary.

### San Benito County.

Whereas, We, the members of San Benito County Medical Society, in meeting assembled, deplored the loss of our honored and esteemed member, Dr. Geo. C. Porter; and

Whereas, By his death, to us has been lost a most able, charitable and conscientious devotee to the profession; and

Whereas, We are deeply conscious of the great loss we and the community at large have sustained by the death of our brother, a true, honest and valued friend; therefore be it

*Resolved*, That we acknowledge his untimely death with great sorrow and distress, and to his widow we tender our deepest and sincerest sympathy in this hour of saddest bereavement; and be it further

*Resolved*, That these resolutions be inscribed in our minutes, a copy sent to his bereaved widow, one to the State Medical Society, and one to each of our county papers.

DR. L. C. HULL,  
DR. F. O. NASH,  
DR. R. W. O'BANNON,  
DR. J. H. TEBBETTS,  
DR. J. D. BALL,  
DR. R. ROCA,  
DR. W. T. HICKS,  
DR. J. M. O'DONNELL, Secretary.

### Santa Clara County.

The regular monthly meeting of the Society was held at the parlors of the Bristol Hotel, San Jose, on the evening of August 16, 1905, convening at the hour of eight, with the following members in attendance: Asay, President, in the chair; McNary, Wagner, Brown, Jordan, Burns, Paterson, Southworth, Holbrook, Marvin, and Osborne, Secretary.

Dr. W. W. Fraser of San Jose, and Dr. W. C. Chilson of Santa Clara were elected to membership.

Dr. E. F. Holbrook was introduced as the speaker of the evening and presented the subject of tubercular adenitis, speaking extemporaneously in lieu of offering a paper. His treatment of the subject was of a clinical character and his remarks were listened to with great interest.

Dr. H. C. Brown opened the discussion, expressing the opinion that the early and radical surgical operations for the removal of the glands in the uncomplicated forms of the disease were not to be commended, since other lines of treatment were usually sufficient and effective. He further entertained the society by introducing a male patient who had suffered some years from this disorder and had been subjected to various medical and surgical lines of treatment at the hands of Eastern practitioners, the history of which was gone over quite fully and critically. The discussion was further participated in by Drs. Paterson, McNary, Wagner, Jordan and Southworth.

Applications for membership were received from Dr. Marion Fairweather Stirling of Los Gatos, Dr. Archibald Cowdry MacChesney of Los Gatos, Dr. Edwin A. Kelly of State Hospital, Agnew, Cal., Dr. Morris J. Gates of Campbell.

The secretary presented the receipts covering membership in, and the transfer credentials from the Alameda County Society for Dr. Stirling, and on motion she was therefor regularly admitted to membership, the other applications passing to the Committee on Admissions.

A. E. OSBORNE, Secretary.

### Solano County.

The physicians of Solano county, in the latter part of July, met and began preliminary work of organization. On August 31st another meeting was held and final organization of the Solano County Medical Society was effected. The arrangements for this meeting had been very carefully worked up by the local committee, and it is to be regretted that more of the physicians outside of Vallejo did not take advantage of this opportunity to come in personal contact with each other. After luncheon the meeting was called to order by Dr. H. O. Miller, the President, and was addressed by the Mayor of Vallejo, Mr. James Roney. On the invitation of the Society, Dr. Jones spoke a few words on the subject of organization, and was followed by Dr. G. M. W. Lehman, who exhibited some excellent lantern slides of X-ray work, and by Dr. Emmett Rixford, who spoke upon the subject of fracture of the astragalus. After this portion of the meeting there were general remarks on the subject of organization and the efforts to be made to secure the membership of every eligible physician in the county. The roster was left open for 60 days, to give every eligible physician in the county an opportunity of joining as a charter member. At this meeting the following physicians qualified: H. O. Miller, Rachel Lane, J. W. Huckins, J. J. Hogan, Emily Hartman, C. E. Arnold, F. T. Bond, Bernard Klotz, S. G. Bransford.

We certainly extend to this, the youngest of our societies, every assurance of good will. We sincerely trust that the physicians of Solano county may unite in this opportunity to establish a county society, and we shall be glad to welcome them in affiliation.

### Ventura County.

The Ventura County Medical Society held its quarterly meeting at Saticoy, September 11th, at the residence of Dr. Charles Teubner. After the election to

membership of F. H. Huning, County Physician and physician to the County Hospital, and the disposal of routine matters, Dr. Teubner read a paper on typhoid fever. The paper was discussed by the President, Dr. Livingston, and Drs. Cunnane, Love, Maulhardt and Dilworth. The members then repaired to the dining room, where the genial hostess, Mrs. Teubner, had prepared a repast, to which ample justice was done.

CHARLES TEUBNER, Secretary.

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#### CALIFORNIA ACADEMY OF MEDICINE.

Regular meeting held August 22, 1905, the president, Dr. Dudley Tait, being in the chair.

*Tendon Transplantations for Infantile Hemiplegia.* Dr. S. J. Hunkin demonstrated a boy, 11 years old, who had infantile spastic hemiplegia, with the typical club hand and foot. The hand was strongly pronated and ulnar-flexed, and could only be approximated to the face with its posterior ulnar border. Eight weeks ago the tendon of the pronator radii teres was detached from its insertion, a silk tendon was sutured to it and then passed around the radius posteriorly and fastened under the periosteum at or just below its original insertion. This muscle, therefore, now acts as a supinator instead of as a pronator, and the boy is able to feed himself with that hand and carry a glass of milk to his mouth. At a later operation the tibialis posticus was divided as it passed behind the ankle, the proximal end was passed posterior to the tibia and fibula to the outer side of the leg, and then subcutaneously to the outer border of the foot and planted with silk under the periosteum at the base of the fifth metatarsal bone. The distal end was sutured to the Achilles tendon. As a result the boy can now, for the first time, dorsiflex and pronate the foot. Dr. Hunkin called especial attention to the fact that the boy could make these new movements without training as soon as the splint was removed. He now proposes as a final operation to move the flexor carpi ulnaris to the position of an extensor; for when the wrist is well extended the hand flexors work to better mechanical advantage.

*Diffuse Dilatation of the Esophagus.* Dr. H. C. Moffitt showed a patient who had had difficulty in swallowing for about 7 years, off and on. Patient knows of no injury to his esophagus. He has the sensation that his food is stopped before it reaches his stomach. It may then return to his mouth, or it may cause him choking sensations, together with dyspnea and palpitation. More recently he has had cramps under the sternum. He can sometimes assist the passage of food through his esophagus by taking a long breath and throwing his head back. At present a stomach tube cannot be passed into the stomach on account of an obstruction that is met about 47 cm. from the teeth. The esophagus will hold about 500 cc. of liquid, and the material obtained from it recently shows pus and blood cells. After the patient had swallowed a suspension of bismuth, an X-ray plate was taken, and this showed a diffuse spindle-shaped dilatation of the esophagus. Among the possible causes of such a dilatation are (1) a primary spasm of the muscle at the cardiac end of the esophagus, and (2) a primary diffuse weakening of the esophageal musculature due to a lesion of the vagus nerve. The direct cause is believed to be an acute esophagitis in some cases; in others it is believed to result from the habit of swallowing large masses of food too hastily.

Dr. C. M. Cooper stated that the esophagus normally will hold about 100 cc. of fluid. In the diagnosis of carcinoma of the esophagus, it is important to remember that the bronchial glands are frequently the first to be involved, and that their enlargement may be demonstrated by the use of the X-ray.

Dr. Geo. Blumer has seen a diffusely dilated esophagus at autopsy. Its walls were very much thickened, resembling those of a congenitally dilated colon.

*Leprosy Simulating Syringomyelia.* Dr. H. C. Moffitt presented a boy who had come from the Cape Verde

Islands about 3 years ago. No satisfactory history of his present illness could be obtained. The skin showed an irregular pigmentation with somewhat oval or circular whitish patches scattered over it. The latter are not anesthetic, and they sweat after injections of pilocarpin. No stigmata of syphilis. The left small occipital, right great auricular, and the right ulnar nerves are somewhat thickened. Left hand claw-shaped, with atrophy and the reaction of degeneration in the smaller muscles. Right equinovarus with atrophy of foot extensors and reaction of degeneration in the tibialis anticus and the peroneal. Reflexes normal except for the absence of the right Achilles and both plantar reflexes. Irregular anesthesia, especially of the distal portions of the extremities.

The differential diagnosis lies mainly between leprosy and syringomyelia. Against the latter are (1) the absence of scoliosis, of ataxia, of involvement of the sphincters, of spasticity of the legs, and (2) the peculiar distribution of the palsies (left hand and right foot), the widespread loss of sensation in the lower extremities and the thickening of the peripheral nerves.

Dr. D. W. Montgomery stated that the skin lesions are such as might occur in leprosy, and that the enlargement of the nerves is very strong evidence in support of that diagnosis.

Dr. H. Morrow said that it is unusual to see so much leucoderma in leprosy without a corresponding loss of sensation.

Dr. C. M. Cooper called attention to the fact that the ulnar nerves may be enlarged in other conditions than leprosy.

*Vincent's Angina.* Dr. H. W. Allen demonstrated smears showing the organisms of Vincent's angina. They were obtained from a patient who had had a sore throat, a temperature of 102.6° (possibly due to a complicating malaria), and an ulceration on the left tonsil which was the size of a ten-cent piece, and was covered by a grayish-white membrane. The breath possessed a peculiar fetid odor, resembling that of mouldy hay. The organisms obtained were two: a fusiform bacillus and a spirillum. These organisms are believed by Vincent to be the causes of a number of other infections, such as ulcerative stomatitis, noma, gangrene of the lungs and putrid pleurisy. Clinically the angina must be distinguished especially from diphtheria and syphilis.

Dr. Wm. Ophüls believes that it is not altogether certain that these organisms cause the angina, for similar ones may be found in the mouths, and especially about the teeth, of healthy individuals. It is possible that they are merely secondary invaders, and that the cocci that are almost invariably found in these throats are the primary causes of the lesions. We must differentiate this disease from that recently described by Oliver, which latter is due to an organism of the oldium group.

A. W. HEWLETT, Secretary.

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#### Poppy Alkaloids.

In Vermont previous success in growing opium poppies has been repeated with even better results. The attempt to cultivate this plant has been made with a view to supplying our demand for poppy alkaloids for medicinal uses. As the result of the repeated experiments, success has at last attended the effort to obtain morphine directly from the juices of the plant. If this can be done commercially, the plants produced in American fields will replace Oriental opium as a crude source for morphine.

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#### Marriage of Dr. H. E. Alderson.

Dr. H. E. Alderson, Secretary of the San Francisco County Medical Society, married Miss Cordelia Church Bishop on the 26th of September at the First Congregational Church in Oakland.

## PUBLICATIONS.

**Handbook of Anatomy.** Being a Complete Compend of Anatomy, Including the Anatomy of the Viscera and Numerous Tables. By JAMES K. YOUNG, M. D., Professor of Orthopaedic Surgery, Philadelphia, Polyclinic, etc. Second edition, revised and enlarged. With 171 engravings, some in colors. Crown octavo, flexible cloth, rounded corners. \$1.50 net. F. A. Davis Company, publishers, 1914-16 Cherry street, Philadelphia.

It is unfortunately true that there is a considerable demand for books of this class. That they are useful for some purposes cannot be denied; nevertheless their general employment is to be deplored. Anatomy is a science which cannot be learned from compends.

This particular book consists of 402 pages, and the arrangement of the material is essentially the same as that of others, being based chiefly on Gray's Anatomy. Whilst this book is possibly better than some of its class, many of its descriptions are, from their very brevity, often confusing. The appendix vermiciformis, for example, is dismissed in four lines. Surely this organ is sufficiently important to warrant more description than is given. Again the description of the perineum consists practically of nothing more than the recital of the names of the structures found in this region. If the student had to rely on this book for his knowledge of the anatomy of the female perineum, his ideas on this subject would remain primitive.

The importance of clear and accurate illustrations has, perhaps, nowhere been more emphasized than in dealing with anatomical subjects. It is unfortunate, then, that many of the illustrations in this compend are not better. With improvements in this respect and a revision of some of the text, we feel that the book would be very creditable. A. J. J.

**The Surgical Assistant.** A Manual for Students, Practitioners, Hospital Internes and Nurses. By WALTER M. BRICKNER, B. S., M. D., Assistant Surgeon, Mt. Sinai Hospital, Out-Patient Department, etc. 360 pages. 123 original illustrations and 116 illustrations of surgical instruments. New York: The International Journal of Surgery Company, 1905. Price \$2.00 net.

This small volume of 363 pages has been chiefly written for hospital internes and nurses. Somewhat enthusiastic as to the possibilities suggested by the title, we were disappointed in the manner of treatment of what might have been a very interesting topic. However, the first two chapters on "The Conduct of the Assistant, and The Hospital Interne," contain subject matter of considerable importance. Chapter III, which is entitled "Assistance in Examinations and Dressings," is certainly far from being suggestive, especially that section devoted to fractures and dislocations. The author's experience in this class of surgery is evidently quite limited. Chapters IV and V certainly do not flatter the intelligence of the hospital interne. Other sections are devoted to the subjects of "Anesthetics," "Methods of Sterilizing," "Handling Instruments" and "The Immediate Post-operative Care of the Patient." For the most part the treatment is superficial, and the chapter on "The Post-operative Care of the Patient" is, on the whole, inferior to that found in some text-books of nursing.

The remainder of the book consists mainly of a recital, with brief descriptions, of some of the common surgical operations. Many of the procedures are not as well described as in the average text-book of surgery. Throughout the text there are "123 original illustrations." Many of them are actually ridiculous. Finally the book is concluded with an appendix which contains, among other things, methods for preparing suture materials, and illustrations of various surgical instruments. With reference to the latter, we feel that the reader would derive infinitely greater information by consulting a good instrument maker's catalogue.

Although this little book will undoubtedly be met with approval among a certain class of readers, it does not meet the demands of intelligent hospital internes. Where the writer should have been original he has not even proven suggestive. A. J. L.

## New Licentiates.

The following is the list of those who passed the July and August examinations of the State Board:

W. C. Alvarez, H. L. Avery, A. A. Atkinson.

W. A. Bayley, Adolph Berg, S. J. Brimhall, Lois V. Bronson.

George E. Chappell, Frank F. Clair, W. F. Cothran, A. F. Cowder, C. D. Cowles.

Percival Dolman.

Edw. W. Earing, Frank W. Edmonds, J. C. Egeberg, Clifton M. Faris, John Hayes Fisher.

Marcus Goodson.

Joseph H. Hall, J. S. Hanlon, Albert J. Haskins, A. T. Hembree, Hermann V. Hoffmann, Lucius J. Huff, R. H. Hunt, Walter Hurst, Woods Hutchinson.

Josephine A. Jackson.

Charles W. Lawton, H. Clifford Loos.

Marion B. McAulay, John S. McEachern, James H. McKellar, Albert Henry McNulty, Edw. W. Merrithew, Roy Henry Morris.

James E. Nelson, Jennie E. Nesbitt, Ephraim Northcott.

A. L. Offield.

Fred W. Peterson.

William Quinn.

A. J. Remmel, M. H. Ross, Louis X. Ryan.

J. F. Sherfy, Jessie H. Simpson, H. F. Sloane, F. H. Smith, P. C. Smith, George S. Snyder, P. H. Sunde, Harry L. Swauger.

D. A. I. Thieme, Mary L. Thomson, E. C. Turner.

J. I. Vickerson, H. M. Voorhees.

Calvin A. Walker, J. W. Watenpaugh, Phil H. Weber, Harry I. Wiel, Phil L. Wise, William F. Wismar, G. A. Wood.

Albert F. Zimmerman.

## Wood Alcohol.

Practically pure methyl alcohol is on sale in the United States under various names. Among these, Columbian, or Manhattan, spirit may be mentioned. The toxic character of this alcohol is so pronounced as to render it advisable that every package containing it—no matter what the trade name may be—should be plainly marked, as is required for poisons. Unpurified wood alcohol is known also as wood spirit and wood naphtha.—H. W. Wiley, in *N. Y. Medical Journal*.

## July-August Examinations; a Correction.

In transcribing the result of the recent examinations a slight error crept in. Under the caption "Failed," at the July examination, the Hahnemann Medical College of California is credited with 3 candidates. This is an error, as one of these applicants graduated from the Hahnemann College of Philadelphia.

## Herzstein Lectures.

The University of California invites you and your friends to be present at six lectures on special chemical problems related to practical medicine to be delivered by Dr. Alonzo E. Taylor at eight o'clock in the evening at the Mark Hopkins Institute of Art, San Francisco. The dates and subjects of the lectures are as follows: October 10th, "The Toxic Agent in Gastro-Intestinal Auto-Intoxication"; October 13th, "The Theory of Disinfection"; October 17th, "The Relations of the Nitrogenous to the Carbonous Metabolism in Disease"; October 20th, "The Value of Kryoscopic Investigations for Pathology and Diagnosis"; October 24th, "The Derivation of the Body Sugar in the Diabetic"; October 27th, "The Derivation of the Body Sugar in the Diabetic."

#### Examinations in Obstetrics.

*To the Editor of the STATE JOURNAL:* I trust that you will accord me the courtesy of the JOURNAL, that I may enter a protest as to the authenticity of facts, as set forth in the issue of September, under the *ad captandum* title, "A Worthy Examiner." Without disparaging the transcendent merits of the examiner in question, I am constrained, in justice to the Board of Examiners, and in defense of gentlemen, who had the honor (or misfortune?) to examine in obstetrics, to point out to your readers, that the data touching such examinations in the past is quite erroneous. The following figures showing percentage of failures in obstetrics, for the years 1903-04, will best subserve the argument. At the several examinations of 1903, the percentage of failures in obstetrics was 8.7, and in 1904 the failures to pass in this subject were 9.11 per cent. In the light of these facts, the extreme jocundity of examinations in obstetrics is not strikingly apparent. Yours very respectfully,

W. S. THORNE.

[It is to be regretted that Dr. Thorne feels any personal irritation at the editorial note referred to as the writer of the said note states that he did not know that Dr. Thorne had at any time conducted the examination in obstetrics. The statements as given in the editorial were made independently by two members of the board, and also by several candidates, and have been reiterated by other candidates subsequent to the receipt of Dr. Thorne's letter. The records of the board give the following percentages of those who failed to pass the examinations during the period referred to: July-August, 1903, failed 26.8%; April, 1904, failed 27.4%; July-August, 1904, failed 37%; October, 1904, failed 32%. Dr. Thorne is to be commended for calling attention to the fact that the generally expressed feeling that the examinations in obstetrics were unusually easy is not so markedly apparent from the records when the actual figures are considered. This is a case just the reverse of that illustrated by the general feeling—now shown to be somewhat un-

reliable—regarding pathology, which was considered exceedingly difficult but which the records show to be about the general average, though decidedly higher in percentage of rejections than obstetrics. A typographical error is to be noted in the editorial under discussion; the minimum 50%, as therein published, should be 75%.—ED.]

#### Mississippi Valley Medical Association.

At the next meeting of the Mississippi Valley Medical Association, to be held at Indianapolis, Ind., October 10th, 11th and 12th, the annual addresses will be delivered by Dr. Arthur R. Edwards, of Chicago, and Dr. W. D. Haggard, of Nashville, Tenn.

Dr. Edwards has chosen for the subject of his address, "Certain Phases of Uremia, Their Diagnosis and Treatment," and Dr. Haggard will discuss in his address, "The Present Status of Surgery of the Stomach." In addition to these addresses, there will be the annual address of the president, Dr. Bransford Lewis, of St. Louis.

A cordial invitation is extended to every physician in the valley to attend this meeting, for which a large number of interesting and valuable papers have been promised.

#### Dr. Olmacher Joins Frederick Stearns & Co.

Dr. A. P. Olmacher, recently of Gallipolis, Ohio, has been appointed director of the biologic laboratories of Frederick Stearns & Co., of Detroit, and has entered upon the duties of that position, which are chiefly those of original research in biologic therapeutics.

Medical men familiar with the literature of pathology, bacteriology and serum therapy in America, know Dr. Olmacher as a pioneer investigator in these branches of science. He was one of the first bacteriologists in this country to immunize a horse against diphtheria, and to produce a serum of clinical value.

## IN ALL FEVER CASES

the liberal use of the odorless solution of metallic chlorides, commercially known as "Platt's Chlorides," is recommended for disinfecting the discharges, deodorizing and refreshing the air of the sick-room, by the most eminent physicians and sanitarians, among whom are;

Dr. H. S. Orme	- - -	Ex-President, California State Board of Health.
Dr. Benjamin Lee	- - -	Secretary, Pennsylvania State Board of Health
Dr. Thomas Darlington	- - -	President, New York Board of Health
Dr. Samuel H. Durgin	- - -	Health Physician, Boston, Mass.
Dr. Heman Spalding	- - -	Chief Health Inspector, Chicago, Ill.

For disinfecting dejecta, dilute one part chlorides with 4 parts water.

For deodorizing by sprinkling and for moistening towels or cloths to be suspended in the sick-room, dilute one part chlorides with 10 parts water.

# Platt's Chlorides,

## The Odorless Disinfectant

A colorless liquid, sold in quart bottles only. Manufactured by Henry B. Platt, N. Y.

FORMULA—A combination of the saturated solutions of Chloride Salts, proportioned as follows: Zn 40 per cent., Pb 20 per cent., Ca 15 per cent., Al 15 per cent., Mg 5 per cent., K 5 per cent.